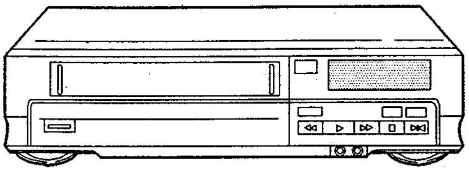
aiwa

HV-DK975
HV-DK925
HV-G150
HV-G110
HV-G100



VIDEO CASSETTE RECORDER

SERVICE MANUAL

- BASIC VIDEO MECHANISM : TN-5900P2LRN188
- TYPE. AE,F,K,KER,NZ,SE1,SE2,SH

HV-DK975	HV-DK925	HV-G150	HV-G110	HV-G100
KER	KER	SH	K,SE1,AE	SH,SE2,F,NZ

S/M Code No. 09-938-029-001

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SPECIFICATIONS

HV – DK975,DK925 (KER)

Recording/playback system		Video : Rotary 2 heads helical scan system Audio : Fixed head
Video signal		PAL/MESECAM color signal, 625 lines,50 fields
	(DK975)	NTSC4.43 color signal. 525 lines,60 fields (playback only)
Recording/Playback time		4 hours max. with E – 240 tape, at Standard play (SP) speed, 8 hours max. with E – 240 tape at long play (LP) speed (PAL/MESECAM)
	(DK975)	2 hours 40 minutes max. with T – 160 tape at Standard play (SP) speed, 8 hours max. with T – 160 tape at extended play (EP) speed (NTSC, playback only)
Fast forward/rewind time		Less than 300 sec, with E – 180 tape
Tape speed		PAL/MESECAM SP : 23.39mm/sec. LP : 11.69mm/sec.
	(DK975)	NTSC4.43 SP : 33.35mm/sec. LP : 16.67mm/sec. EP : 11.12mm/sec.
Tape width		12.65mm
Usable cassette		VHS video cassette
Timer display		24-hour cycle ,day,hour,minute, digital fluorescent display
Timer recording		6 programs within 1 month
Channel coverage		(PAL B/G and D/K, SECAM B/G and D/K system) VHF : E2 – R5 and C6 – E12 channels UHF : 21 – C57 channels
RF output		UHF channel between 30 and 39, PAL G and K, SECAM G and K system
RF output level		75dB μ
Video input		0.5 – 2.0Vp-p,75ohms, unbalanced
Video output		1.0Vp – p,75ohms, unbalanced
Horizontal resolution		230 lines (PAL/MESECAM, nominal)
	(DK975)	220 lines (NTSC,nominal)
Video S/N (luminance)		43dB (minimum)
Audio input		– 8dBs, greater 47 K ohms
Audio output		– 6dBs,less than 2.2 K ohms
Audio frequency response		200Hz – 8KHz
Audio S/N		36dB (minimum)
Operating temperature		5℃ – 40℃
Power requirements		120V/220V – 240V AC,50/60Hz
Power consumption		28watts
Dimensions		380 (W) × 96 (H) × 360 (D) mm (15 × 3 7/8× 14 1/4in.)
Weight		Approx,5.5Kg (12.1 lbs.)

HV – G150 (SH),G110 (SE1,AE,K),G100 (SH,SE2,F,NZ)

Recording/playback system		Video : Rotary 2 heads helical scan system Audio : Fixed head
Video signal		PAL/MESECAM color signal, 625 lines,50 fields
	(G150)	NTSC4.43 color signal. 525 lines,60 fields (playback only)
Recording/Playback time		4 hours max. with E – 240 tape, at Standard play (SP) speed, 8 hours max. with E – 240 tape at long play (LP) speed (PAL/MESECAM)
	(G150)	2 hours 40 minutes max. with T – 160 tape at Standard play (SP) speed, 8 hours max. with T – 160 tape at extended play (EP) speed. (NTSC, playback only)
Fast forward/rewind time		Less than 300 sec, with E – 180 tape
Tape speed		PAL/MESECAM SP : 23.39mm/sec. LP : 11.69mm/sec.
	(G150)	NTSC4.43 SP : 33.35mm/sec. LP : 16.67mm/sec. EP : 11.12mm/sec.
Tape width		12.65mm
Usable cassette		VHS video cassette
Timer display		24-hour cycle ,day,hour,minute, digital fluorescent display
Timer recording		6 programs within 1 month
Channel coverage	(SH,SE)	VHF : E2 – E4 and E5 – E12 channels UHF : 21 – 69 channels
	(AE)	VHF : E2 – S2 and S3 – S20 channels UHF : 21 – 69 channels
	(K)	UHF : 21 – 69 channels
	(F)	VHF : 4 – 13 channels UHF : 21 – 69 channels
	(NZ)	VHF : NZ1 – 5 and 5A – 12 channels UHF : 21 – 69 channels
RF output		UHF channel between 30 and 39, PAL G system (K) PAL I system
RF output level		75dB μ
Video input		0.5 – 2.0Vp-p,75ohms, unbalanced
Video output		1.0Vp – p,75ohms, unbalanced
Horizontal resolution	(G150)	240 lines (PAL/MESECAM, nominal)
	(G110,G100)	230 lines (PAL/MESECAM,nominal)
Video S/N (luminance)		43dB (minimum)
Audio input		– 8dBs, greater 47 K ohms
Audio output		– 6dBs,less than 2.2 K ohms
Audio frequency response		200Hz – 8KHz
Audio S/N		36dB (minimum)
Operating temperature		5℃ – 40℃
Power requirements	(SH)	120V/220V – 240V AC,50/60Hz
	(SE,AE,F,NZ)	230V AC,50Hz
	(K)	240V AC,50Hz
Power consumption		28watts
Dimensions		380 (W) × 96 (H) × 360 (D) mm (15 × 3 7/8× 14 1/4in.)
Weight		Approx,5.5Kg (12.1 lbs.)

STANDARD MAINTENANCE

1. SERVICE SCHEDULE OF COMPONENT

○ : Check ● : Change

DECK		Periodic Service Schedule			
Ref. No.	Parts Name	1000 h	2000 h	3000 h	4000 h
2-2	UPPER DRUM	○	●	○	●
2-5	DRUM EARTH			●	
3-5	BT BAND ASSY		●		●
3-25	REEL ASSY			●	
3-32	CAPSTAN MOTOR ASSY		●		●
4-6	PINCH ROLLER A		●		●
4-21	ACE HEAD			●	
4-41	BRAKE SHOE		●		●
4-46	LM ASSY			●	
5-26	FL BELT		●		●
5-27	CLUTCH ASSY		●		●
5-29	DRIVE BELT		●		●
6-1	LOADING BELT		●		●
6-22	MAIN BELT		●		●

NOTE :

1. Clean all parts for the tape transport.
   Upper Drum with video head/Pinch Roller
   Audio Control Head
2. After cleaning up the parts, perform all DECK ADJUSTMENT.

2. CLEANING

1. Cleaning of "Video Head" (See Figure − 1)
   Head cleaning by using a chamois skin.

   − Procedure −

   1) Remove the "Cabinet, Steel".
   2) Put on a glove (thin type) to avoid touching the "Upper Drum" and "Lower Drum" with bare hand.
   3) Put a few drops of alcohol on the chamois skin, and by slightly placing it against the "Head Tip", allow the "Upper Drum" to turn the right and left.

   − Remark −

   1) The video head is of very hard material, but since it is very thin, avoid cleaning it vertically.
   2) Wait for the cleaned part to dry out, before operating the unit.
   3) Do not reuse stained chamois skin.

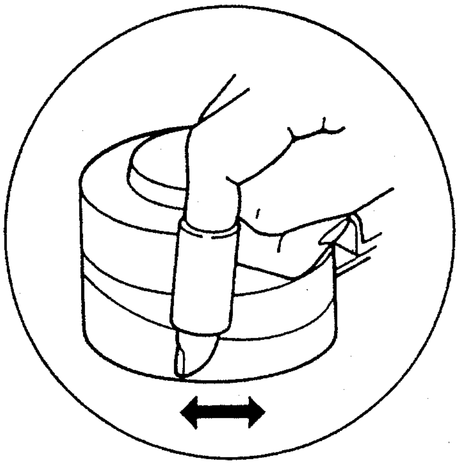


Fig. − 1

2. Cleaning of "ACE Head" (See Figure − 2)
   Head cleaning by using a chamois skin.

   − Procedure −

   1) Remove the "Cabinet, Steel".
   2) Put a few drops of alcohol on the chamois skin, clean up the "Audio Control Head", being careful not to damage the "Upper Drum" and other tape running parts.

   − Remark −

   1) Avoid cleaning "ACE Head" vertically.
   2) Wait for the cleaned part to dry well, before operating the unit.

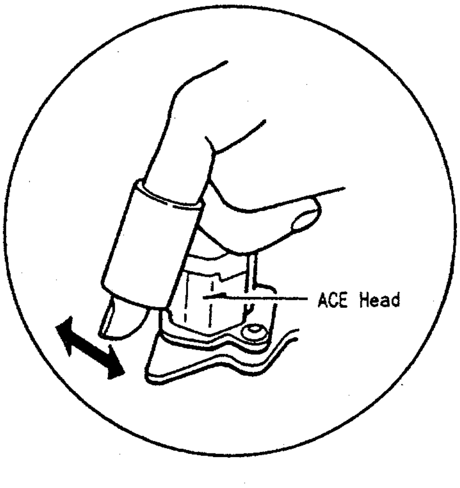


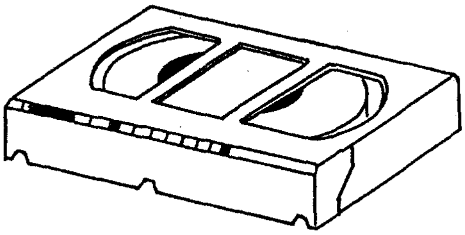
Fig. − 2

SERVICE JIG AND TOOLS

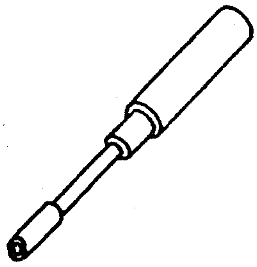
1. SERVICE JIG AND TOOLS

Ref. No.	Name	Adjustment
J-1	Torque Meter (FSJ-VHT-063)	Back Tension
J-2	Special Driver (SMALL)	Tape Running Position, Envelope Wave Form
J-3	Special Driver (LARGE)	X Value
J-4	Mirror	Tape Transportation Check
J-5	Alignment Tape (TTV-P1L)	X Value, Envelope Wave Form
J-6	Alignment Tape (TTV-P1)	ACE Head Height / ACE Head Tilt
J-7	Box Driver M3	Tape Running Position, X Value, Envelope Wave Form
J-8	Alignment Tape (TTV-P2)	ACE Head Azimuth
J-9	EXT. PCB. KIT (A) (Parts No. 09-054-012-010)	For repair of HA circuit board

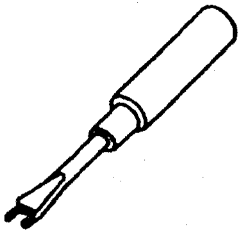
J – 1, J – 5, J – 6, J – 8



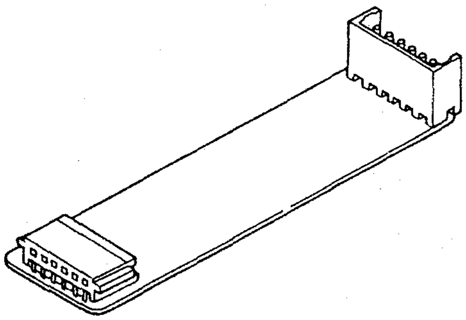
J – 7



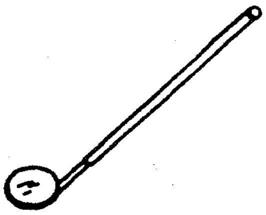
J – 2, J – 3



J – 9

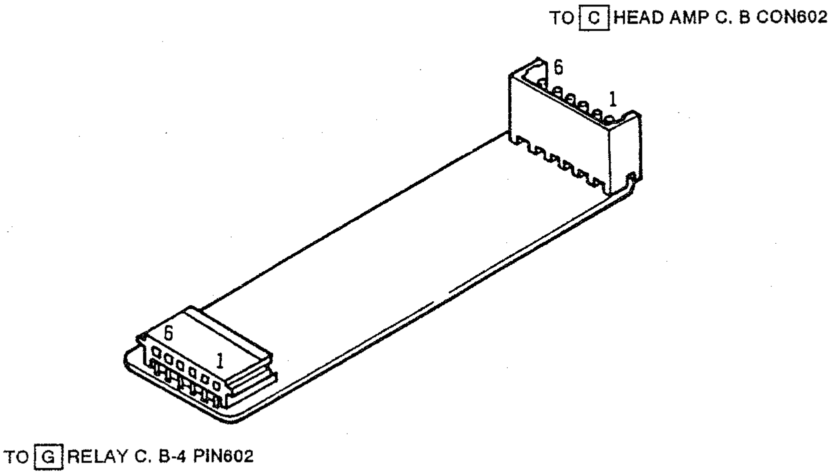


J – 4



2. HOW TO ASSEMBLE THE JIGS

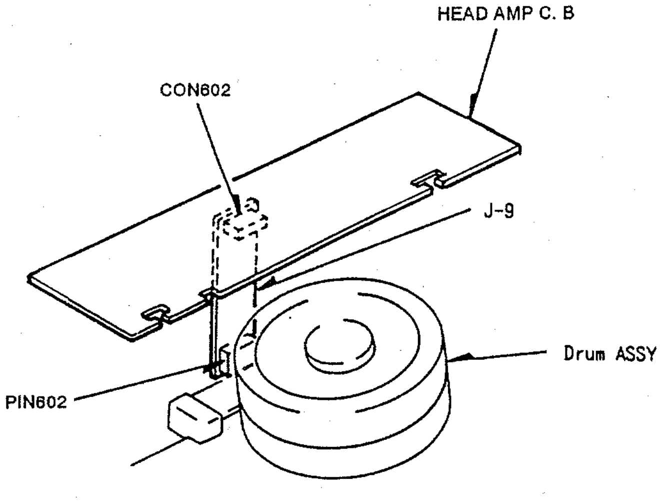
1. Assembling the J－9 (See Figure－1)


TO C HEAD AMP C. B CON602
6
1
6
1
TO G RELAY C. B-4 PIN602

Fig－1

Place the circuit board with the solder side down as shown in the figure above and assemble the connectors, taking care of their directions.

2. Using the J－9 (See Figure－2)


HEAD AMP C. B
CON602
J-9
Drum ASSY
PIN602

Fig－2

Use this jig when servicing the "HEAD AMP C. B".

DISASSEMBLY INSTRUCTIONS

1. "Cabinet Front ASSY" Removal (See Figure – 1)
   1) Remove 2 screws (Ⓐ) holding the "Cabinet, Steel".
   2) Remove 7 screws (Ⓑ) holding the "Plate, Bottom".
   3) Release 7 hooks to remove the "Cabinet Front ASSY" in the direction of the arrow.

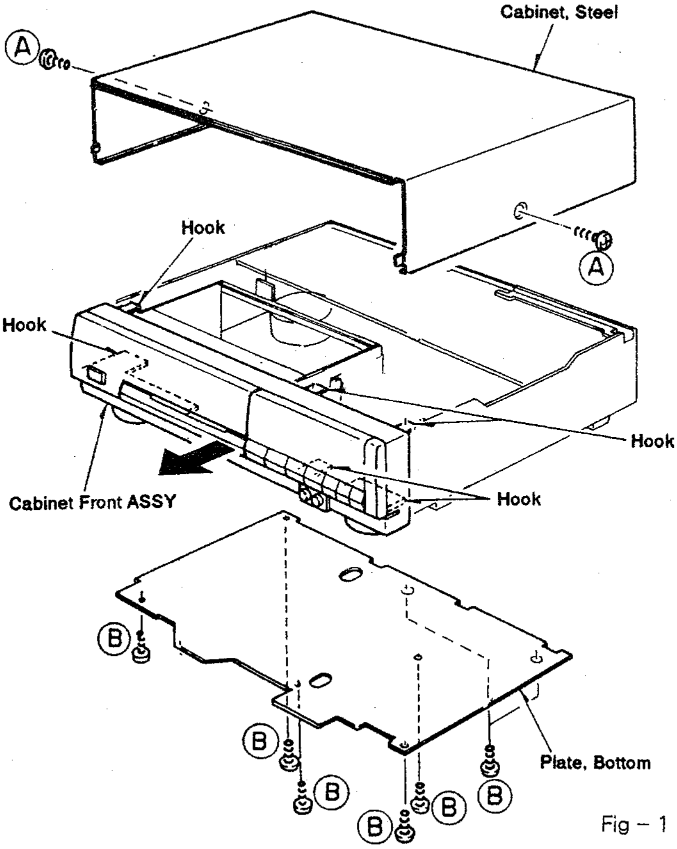

Ⓐ
Cabinet, Steel
Hook
Hook
Ⓐ
Hook
Cabinet Front ASSY
Hook
Ⓑ
Ⓑ
Plate, Bottom
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ

Fig – 1

2. "Power Unit ASSY" and "Main C. B" Removal (See Figure – 2)
   1) Remove 5 screws (Ⓐ) holding the "Main C. B".
   2) Remove 2 screws (Ⓑ) and 2 screws (Ⓒ) holding the "Power Unit ASSY".

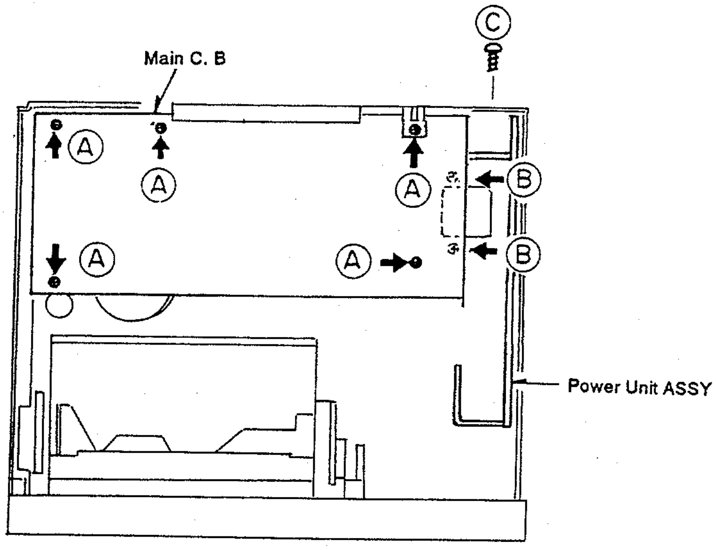

Ⓒ
Main C. B
Ⓐ
Ⓐ
Ⓐ
Ⓑ
Ⓑ
Ⓐ
Ⓐ
Power Unit ASSY

Fig – 2

3. "Mechanism ASSY" Removal (See Figure – 3)
   1) Remove 1 screw (Ⓐ) and disconnect the connector to remove the "Head Amp C.B" in the direction of the arrow.
   2) Remove 3 screws (Ⓑ) holding the "Mechanism ASSY".

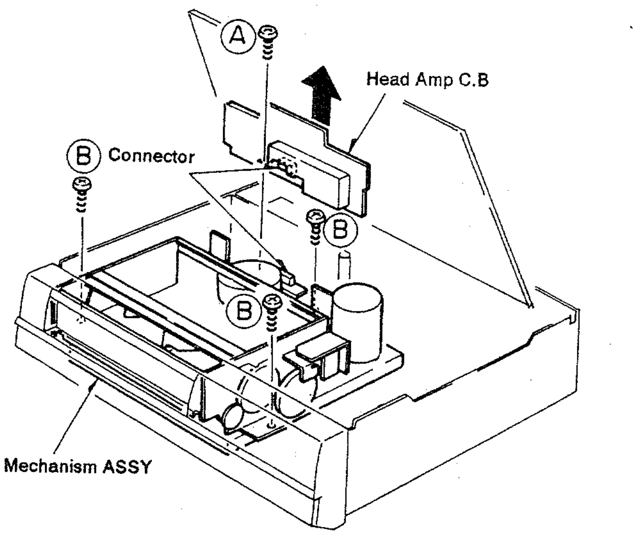

Ⓐ
Head Amp C.B
Ⓑ
Connector
Ⓑ
Ⓑ
Mechanism ASSY

Fig – 3

4. "Front Loading ASSY" Removal (See Figure – 4)
   1) Remove "Main Belt".
   2) Remove 4 screws (Ⓐ).
   3) Release the hooks on both sides and remove the "Front Loading ASSY". (Since it is difficult to release these hooks, hold the front of the "Front Loading ASSY" and shake it up and down to release them.)

5. "Cassette Load Bracket ASSY" Removal (See Figure – 4)
   1) Remove 1 screw (Ⓑ).
   2) Take off the "Cassette Load Bracket ASSY".

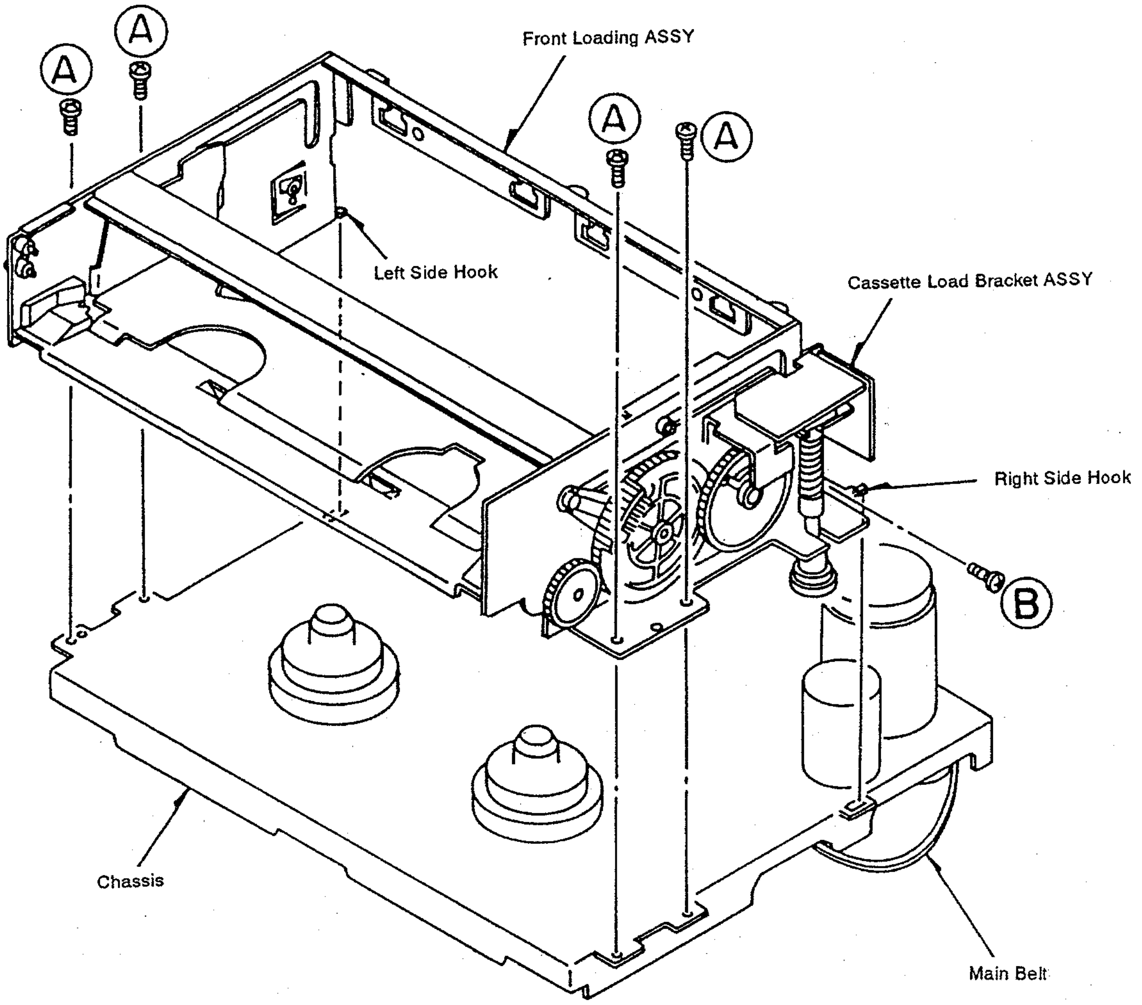

Ⓐ
Ⓐ
Front Loading ASSY
Ⓐ
Ⓐ
Left Side Hook
Cassette Load Bracket ASSY
Right Side Hook
Ⓑ
Chassis
Main Belt

Fig-4

6. "Photo Sensor ASSY" Removal (See Figure – 5)

6 – 1. "Lamp Holder ASSY" Removal

1) Remove 1 screw (Ⓐ) and take off the "T Soft Brake ASSY", "T – Spring, Soft Brake Arm".
2) Release the "Lamp Holder ASSY" from hook (a) of the chassis and turn it counterclockwise to remove it from the chassis.

6 – 2. "Switch C. B", "Sensor Guide" and "Start Sensor C. B" Removal

1) Remove 1 screw (Ⓑ) and take off the "Switch C. B".
2) Remove 1 screw (Ⓒ) and take off the "Sensor Guide".
3) Remove 1 screw (Ⓓ) and take off the "Start Sensor C. B".

6 – 3. "Sensor Guide" and "End Sensor C. B" Removal

1) Remove 1 screw (Ⓔ) and take off the "Sensor Guide".
2) Remove 1 screw (Ⓕ) and take off the "End Sensor C. B".

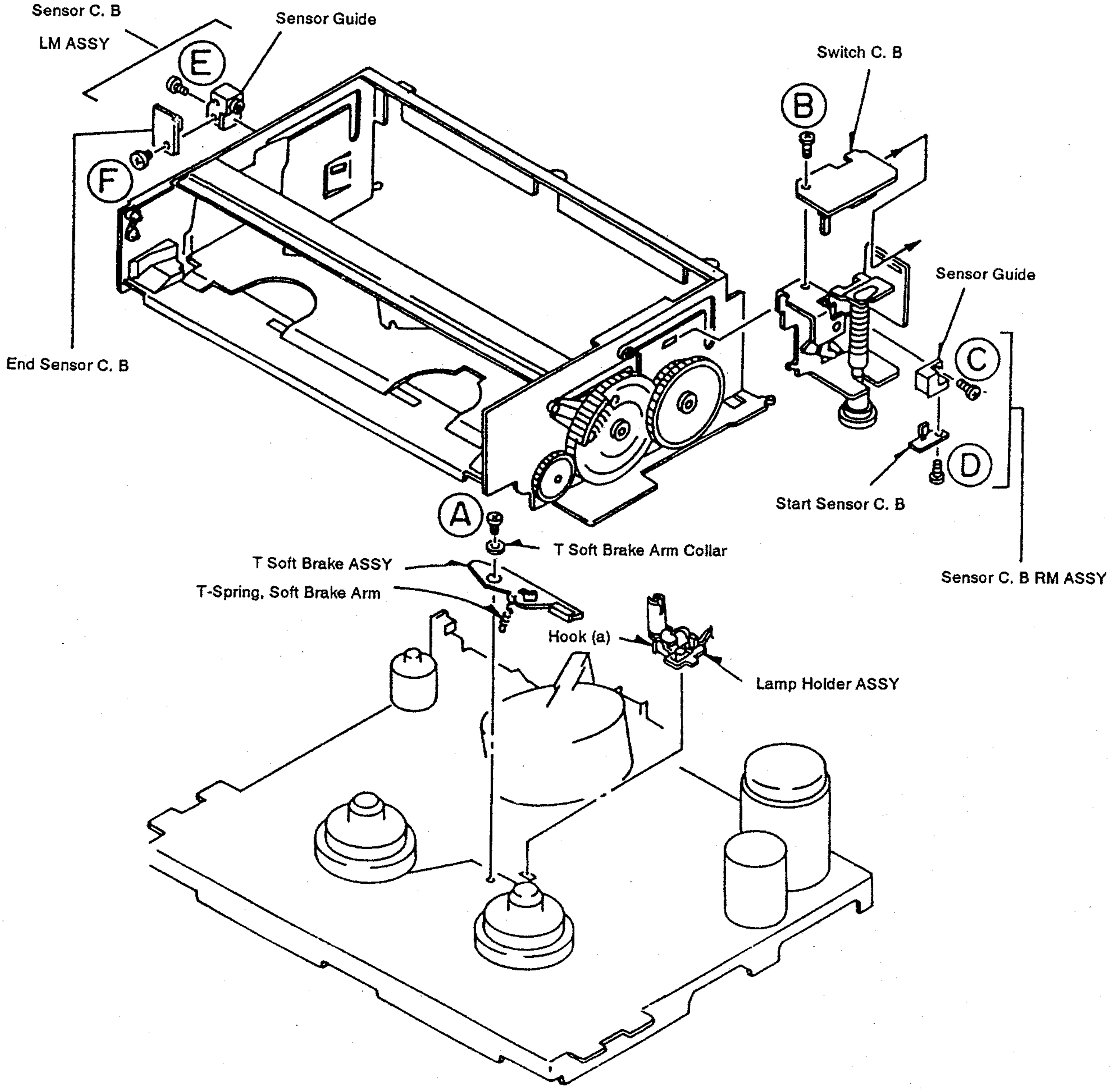

Sensor C. B
LM ASSY
Sensor Guide
Ⓔ
Ⓕ
End Sensor C. B
Switch C. B
Ⓑ
Sensor Guide
Ⓒ
Ⓓ
Start Sensor C. B
Sensor C. B RM ASSY
Ⓐ
T Soft Brake Arm Collar
T Soft Brake ASSY
T-Spring, Soft Brake Arm
Hook (a)
Lamp Holder ASSY

Fig-5

7. "FE Plate" and "ACE Head" Removal (See Figure – 6)
   1. "FE Plate" Removal
      1) Remove Nut (Ⓐ).
      2) Take out the "FE Plate Spring" and pull up the "FE Plate".
      3) Remove 1 screw (Ⓑ) and take off the "Full Erase Head".
   2. "ACE Head" Removal
      1) Remove 2 screws (Ⓒ × 1, Ⓓ × 1) and "Azimuth Spring".
      2) Remove 1 screw Ⓔ and "ACE Head".

8. "Rec Actuator" Removal (See Figure – 6)
   1) Remove "Wire Holder".
   2) Remove screw (Ⓕ) and take off the "Leaf Switch".
   3) Remove screw (Ⓖ) and take off the "FE Actuate Lever", "FE Slide Plate" and "FE Actuate Spring".
   4) Remove screw (Ⓗ) and take off the "Rec Lever", and "Rec Lever Spring".
   5) Remove "Rec Actuate Spoke".
   6) Remove "Rec Actuator".

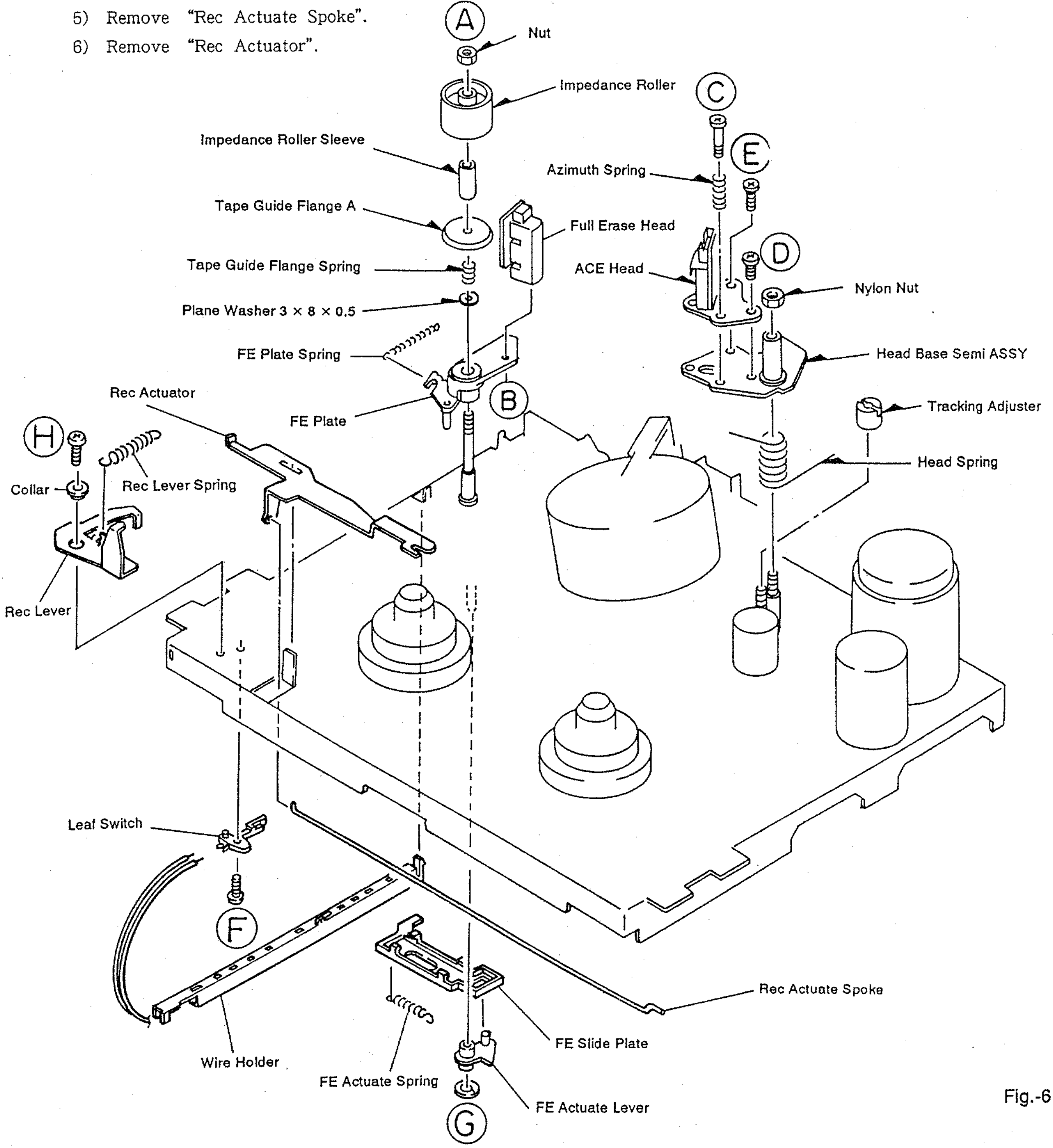

Ⓐ
Nut
Impedance Roller
Ⓒ
Impedance Roller Sleeve
Ⓔ
Azimuth Spring
Tape Guide Flange A
Full Erase Head
Ⓓ
ACE Head
Tape Guide Flange Spring
Nylon Nut
Plane Washer 3 × 8 × 0.5
FE Plate Spring
Head Base Semi ASSY
Rec Actuator
Ⓑ
FE Plate
Tracking Adjuster
Ⓗ
Head Spring
Collar
Rec Lever Spring
Rec Lever
Leaf Switch
Ⓕ
Rec Actuate Spoke
FE Slide Plate
Wire Holder
FE Actuate Spring
FE Actuate Lever
Ⓖ

Fig.-6

9. "Reel Drive Gear" Removal (See Figure – 7)

1) Remove the "Front Loading ASSY".
2) Remove "Drive Belt".
3) Remove Poly – Washer (Ⓐ) and "Middle Pulley ASSY".
4) Remove 3 screws (Ⓑ × 1, Ⓒ × 2) and take off the "Sub Plate ASSY".
5) Remove Nylon – Washer (Ⓓ) and take off the "Clutch ASSY".
6) Remove 1 screw (Ⓔ) and take off the "T – Spring, Soft Brake Arm".
7) Take off the "T Soft Brake ASSY".
8) Remove 2 "E – Rings (Ⓕ)" and take off the 2 "Reel Drive Gear".

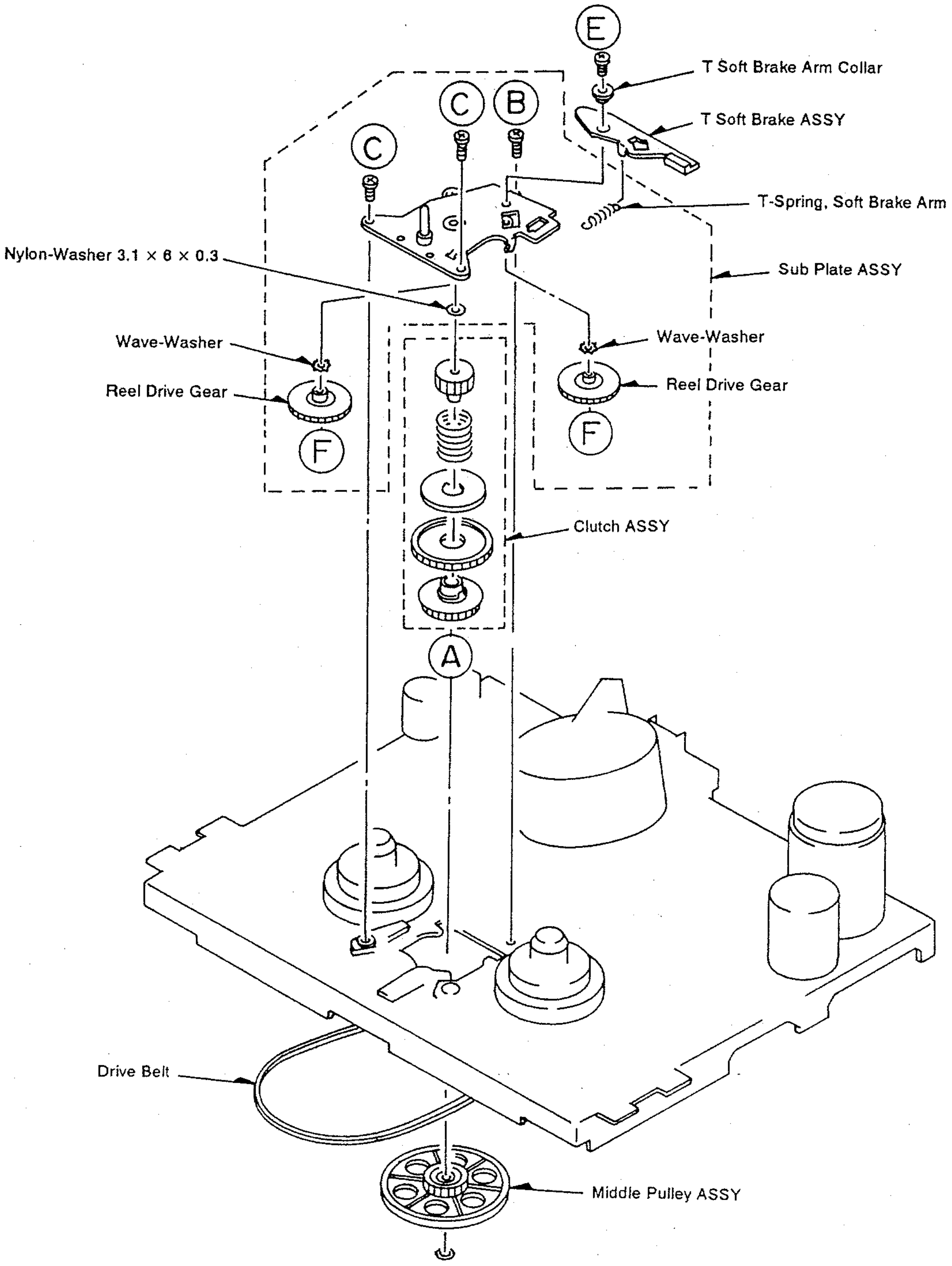

Ⓔ
T Soft Brake Arm Collar
Ⓒ
Ⓑ
T Soft Brake ASSY
Ⓒ
T-Spring, Soft Brake Arm
Nylon-Washer 3.1 × 6 × 0.3
Sub Plate ASSY
Wave-Washer
Wave-Washer
Reel Drive Gear
Reel Drive Gear
Ⓕ
Ⓕ
Clutch ASSY
Ⓐ
Drive Belt
Middle Pulley ASSY

Fig.-7

10. "BT Band ASSY" And "BT Arm Semi ASSY" Removal (See Figure – 8)

1) Remove the "Front Loading ASSY".
2) Remove Poly – Washer (Ⓐ) and "BT Actuate Plate Spring" from the "BT Arm Semi ASSY".
3) Remove 1 screw (Ⓑ) and "Band Holder Spring".
4) Take off the "BT Band ASSY" from the "BT Arm Semi ASSY".

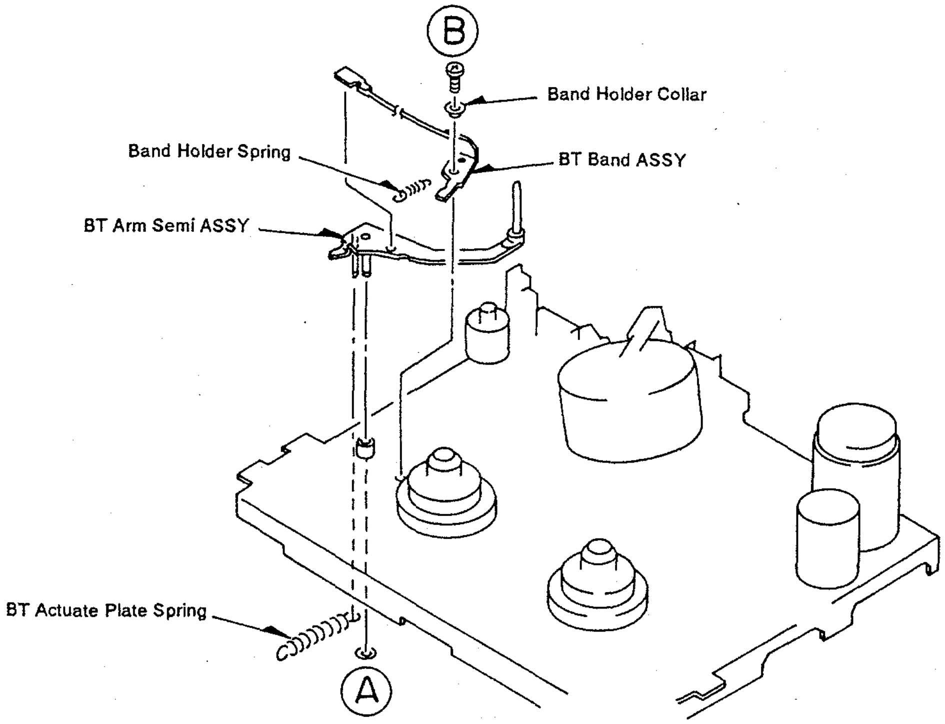

B
Band Holder Collar
Band Holder Spring
BT Band ASSY
BT Arm Semi ASSY
BT Actuate Plate Spring
A

Fig.-8

11. "Reel ASSY" Removal (See Figure – 9)

1) Remove the "Front Loading ASSY", "Gear Holder ASSY" and "BT Band ASSY".
2) Remove 1 screw (Ⓐ) and the "Back Tension Support".
3) Remove the 2 "Reel ASSY".

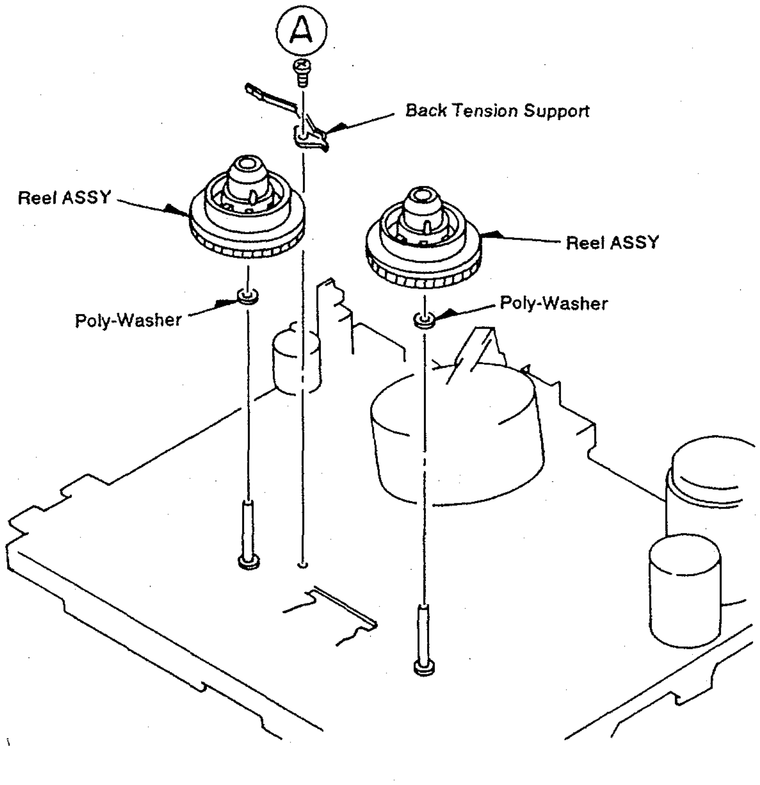

A
Back Tension Support
Reel ASSY
Reel ASSY
Poly-Washer
Poly-Washer

Fig.-9

12. "Cylinder ASSY" Removal (See Figure – 10)

1) Remove the "Front Loading ASSY".
2) Pull out the "RELAY – 1 C. B" from the "Cylinder Motor TM85".
3) Remove 1 screw (Ⓐ) and take off the "Drum Earth".
4) Remove 3 screws (Ⓑ) and take off the "Cylinder ASSY".

= Remarks =

Take off the "Cylinder ASSY" carefully without any damage.

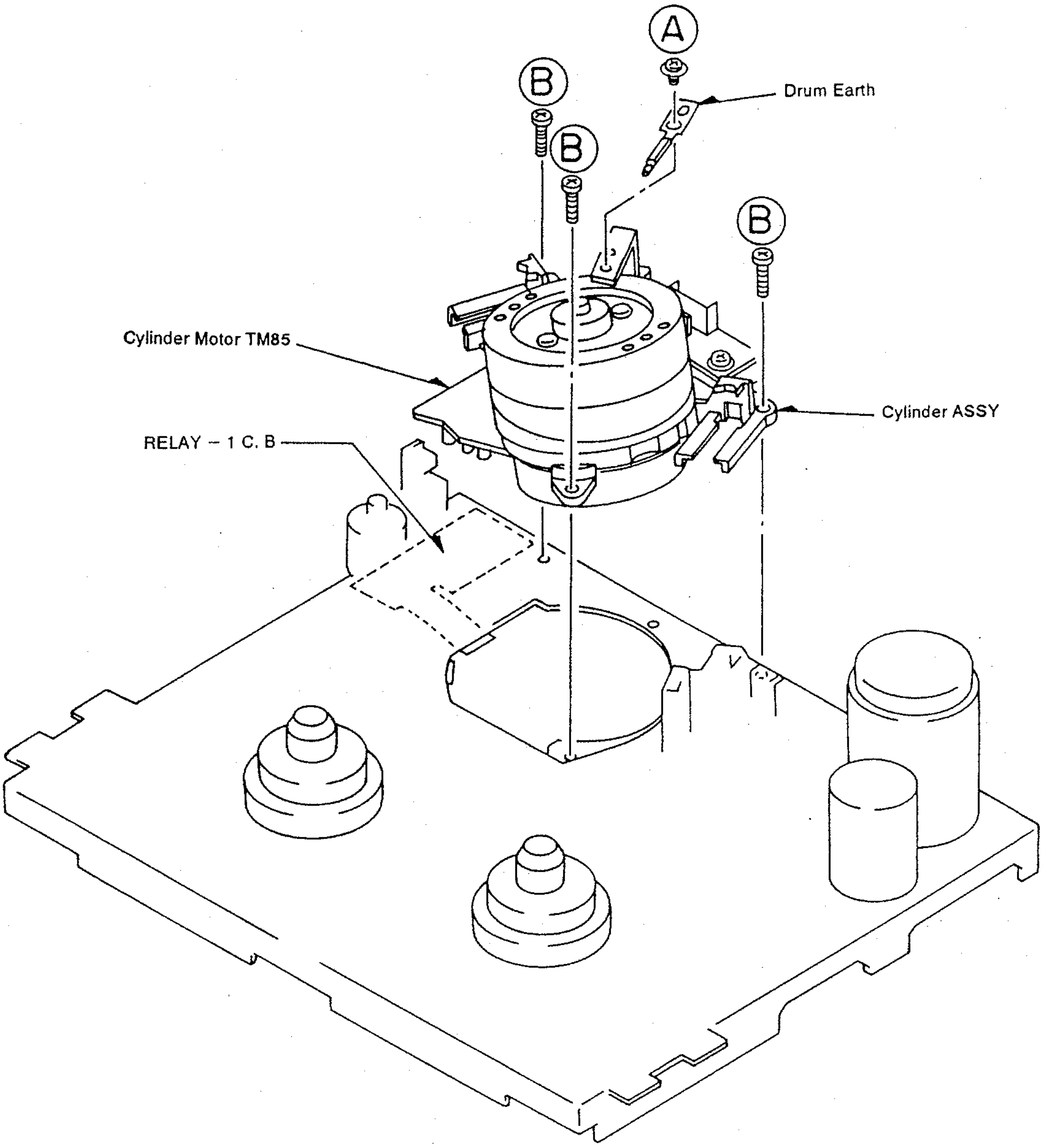

Ⓐ
Ⓑ
Ⓑ
Ⓑ
Drum Earth
Cylinder Motor TM85
Cylinder ASSY
RELAY – 1 C. B

Fig.-10

13. "Upper Drum" Removal (See Figure – 11)
   1) Remove the "Front Loading ASSY".
   2) Remove 1 screw (Ⓐ) and take off the "Drum Earth Bracket".
   3) Remove 2 screws (Ⓑ) and take off the "Upper Drum" in the direction of the arrow.

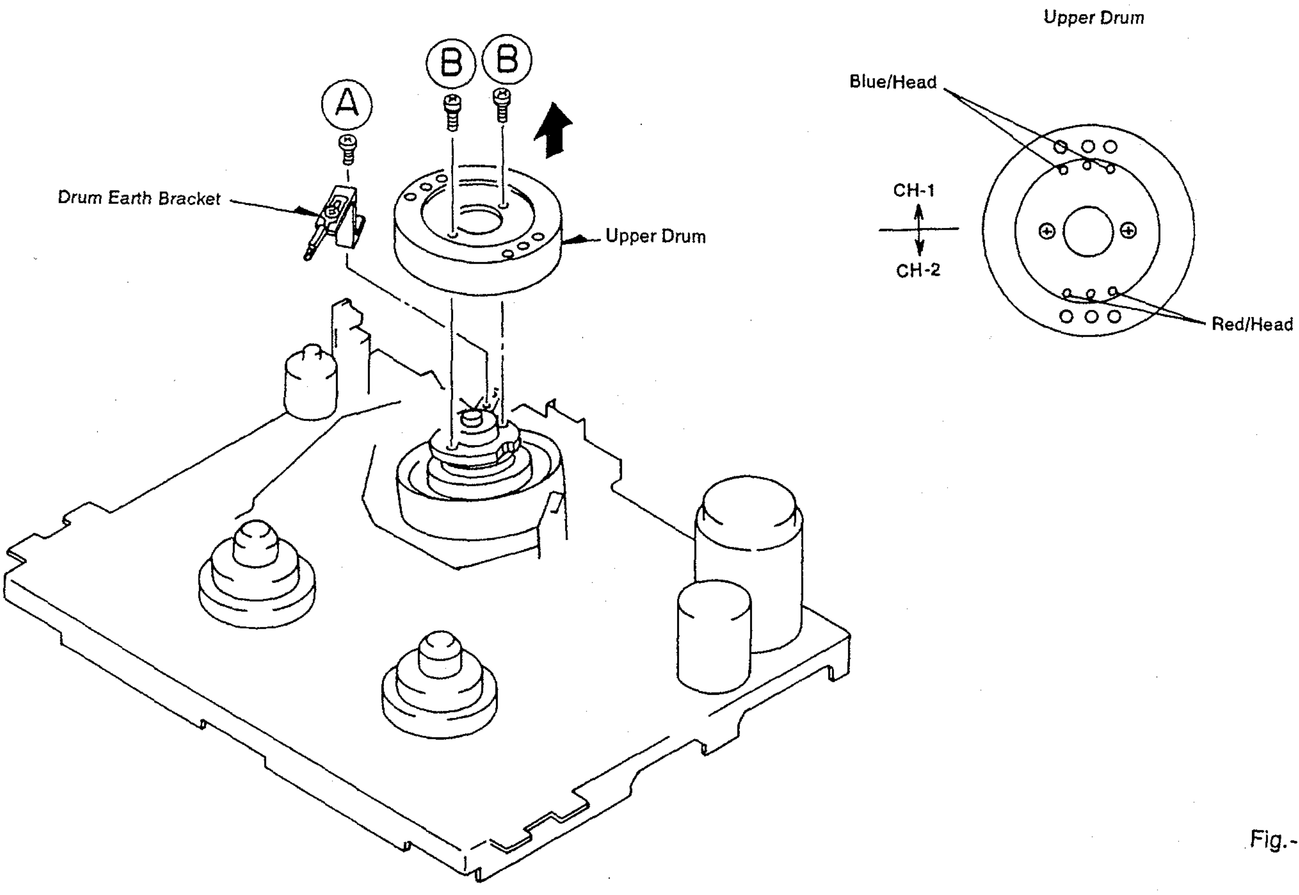

Ⓐ
Ⓑ
Ⓑ
Drum Earth Bracket
Upper Drum
Upper Drum
Blue/Head
CH-1
CH-2
Red/Head

Fig.-11

= Remark =

1. Use gloves and do not touch the drum surface with bare fingers.
2. If the Video head is defective, replace the complete "Upper Drum" with the Head.
3. When installing "Upper Drum" and "Rotor", "Upper Drum" point ⓐ, "Lower Drum" point ⓑ and "Rotor" point ⓒ, these point ⓐ, ⓑ, ⓒ mast line up each other. Otherwise it will creates problem. (See Figure – 11 – 1)

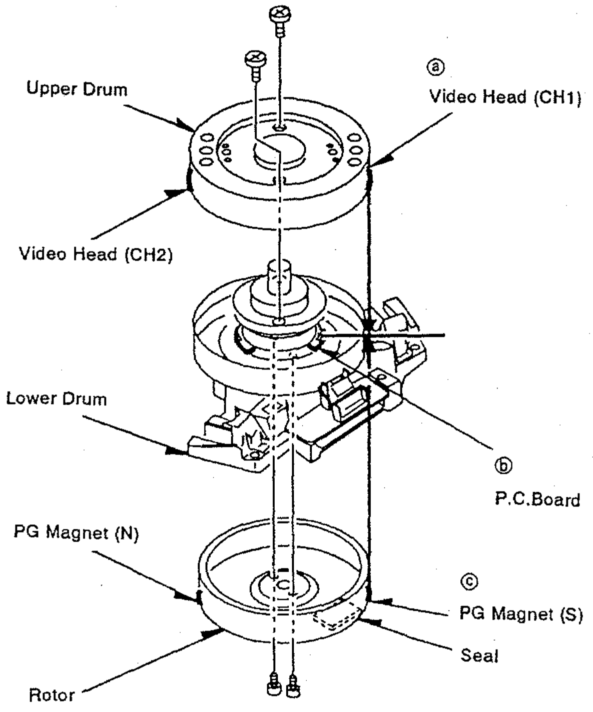
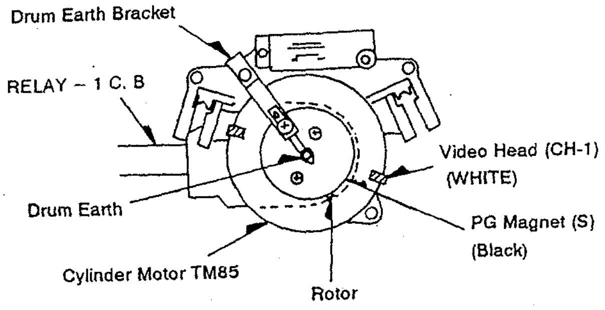

Upper Drum
ⓐ
Video Head (CH1)
Video Head (CH2)
Lower Drum
ⓑ
P.C.Board
PG Magnet (N)
ⓒ
PG Magnet (S)
Seal
Rotor

Fig.-11-1

14. "Cylinder Motor TM85" Removal (See Figure – 12)
   1) Pull out the "RELAY – 1 C. B" from the "Cylinder Motor TM85".
   2) Remove 2 screws (Ⓐ) and take off the "Cylinder Motor TM85a".
   3) Remove 3 screws (Ⓑ) and take off the "Cylinder Motor TM85b".


Drum Earth Bracket
RELAY – 1 C. B
Drum Earth
Cylinder Motor TM85
Rotor
Video Head (CH-1) (WHITE)
PG Magnet (S) (Black)

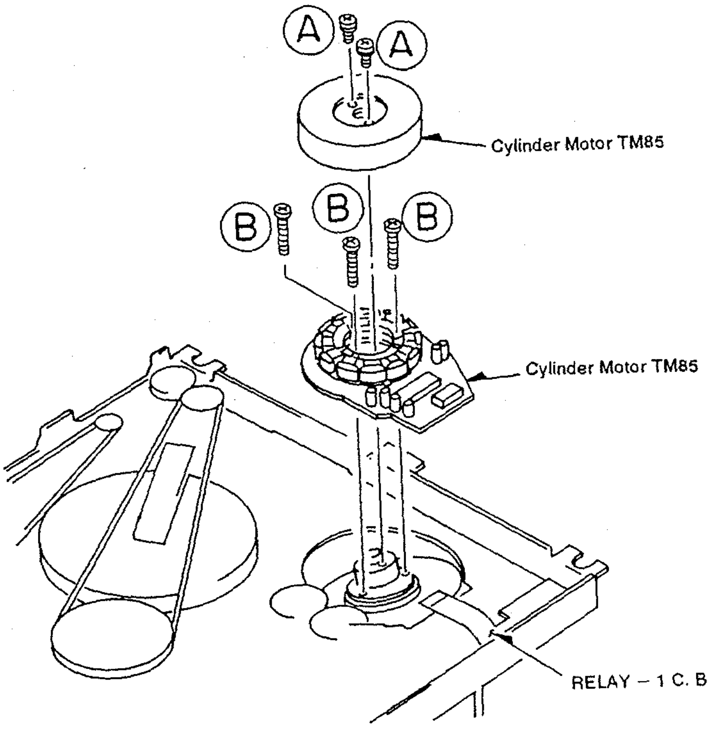

Ⓐ
Ⓐ
Cylinder Motor TM85
Ⓑ
Ⓑ
Ⓑ
Cylinder Motor TM85
RELAY – 1 C. B

Fig.-12

15. "Capstan Motor ASSY" and "LM ASSY" Removal (See Figure – 13)
   1. "Capstan Motor ASSY" Removal
      1) Take off the "Drive Belt" and "Main Belt".
      2) Remove 2 screws (Ⓐ) and take off the "Capstan Motor ASSY".
   2. "LM ASSY" Removal
      1) Take off the "Fl Belt".
      2) Remove 2 screws (Ⓑ) and take off the "LM ASSY".

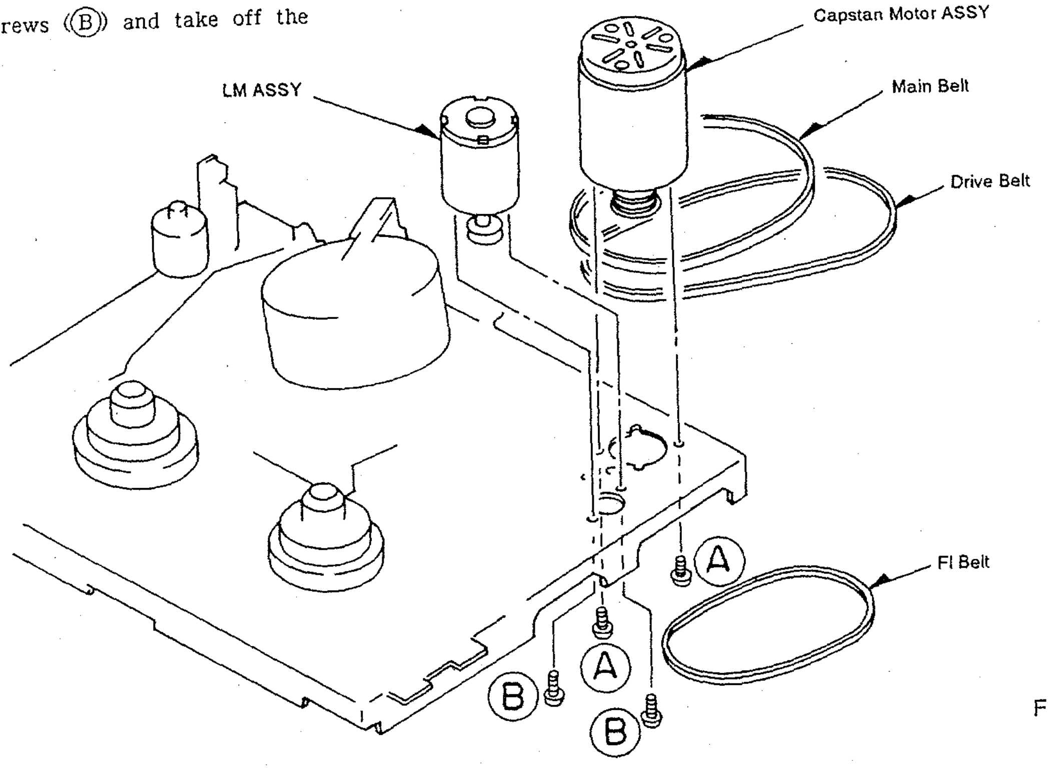

LM ASSY
Capstan Motor ASSY
Main Belt
Drive Belt
Fl Belt
Ⓐ
Ⓐ
Ⓑ
Ⓑ

Fig.-13

16. "Loading Gear" and "Loading Cam" Removal (See Figure – 14)

1) Take off the "Loading Belt" from the "Loading Pulley".
2) Remove Poly – Washer (Ⓐ) and take off the "Loading Pulley".
3) Remove Poly – Washer (Ⓑ) and take off the "Loading Gear".
4) Remove Poly – Washer (Ⓒ) and take off the "Eject Arm" and the "Brake Actuate Arm".
5) Remove 2 screws (Ⓓ), and take off the "Loading Lever Reinforce Plate" and the "Loading Lever ASSY".
6) Take off the "Loading Cam".

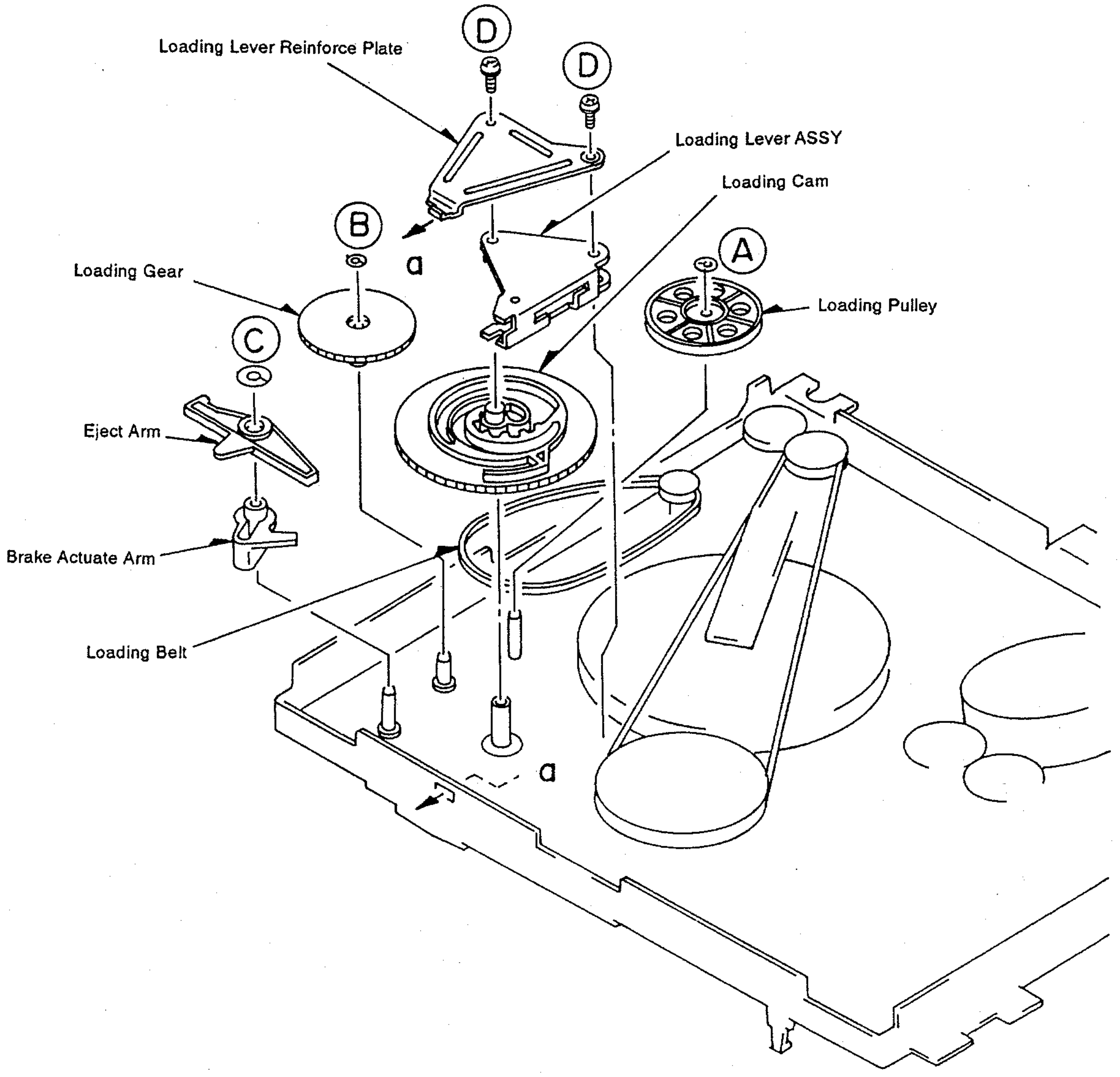

Loading Lever Reinforce Plate
Ⓓ
Ⓓ
Loading Lever ASSY
Loading Cam
Ⓑ
a
Ⓐ
Loading Gear
Loading Pulley
Ⓒ
Eject Arm
Brake Actuate Arm
Loading Belt
a

Fig.-14

17. "Flywheel Capstan" Removal (See Figure – 15)
   1) Remove the Nylon – Washer (Ⓐ).
   2) Take off the "Drive Belt" and "Main Belt".
   3) Remove 2 screws (Ⓑ) and take off the "FL Angle ASSY".
   4) Take off the "Flywheel Capstan".

≡ Remark ≡
Do not miss the Poly – Washer (Ⓒ) when pulling out the "Flywheel Capstan".

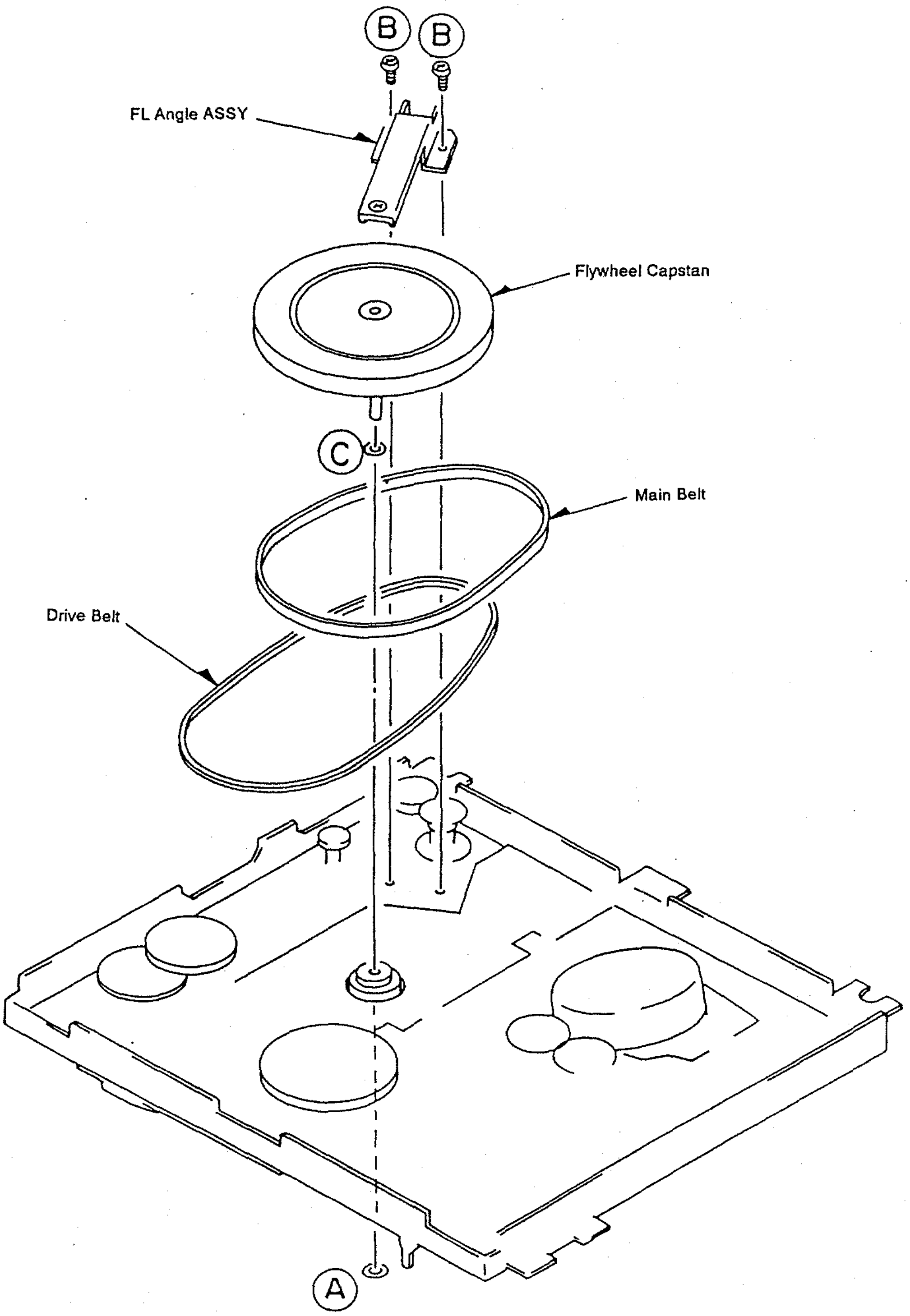

Ⓑ
Ⓑ
FL Angle ASSY
Flywheel Capstan
Ⓒ
Main Belt
Drive Belt
Ⓐ

Fig.-15

18. "Reel Sensor" Removal (See Figure – 16)

1) Remove "Front Loading ASSY" and the "Gear Holder ASSY".
2) Remove "Reel ASSY".
3) Remove "Reel Sensor".

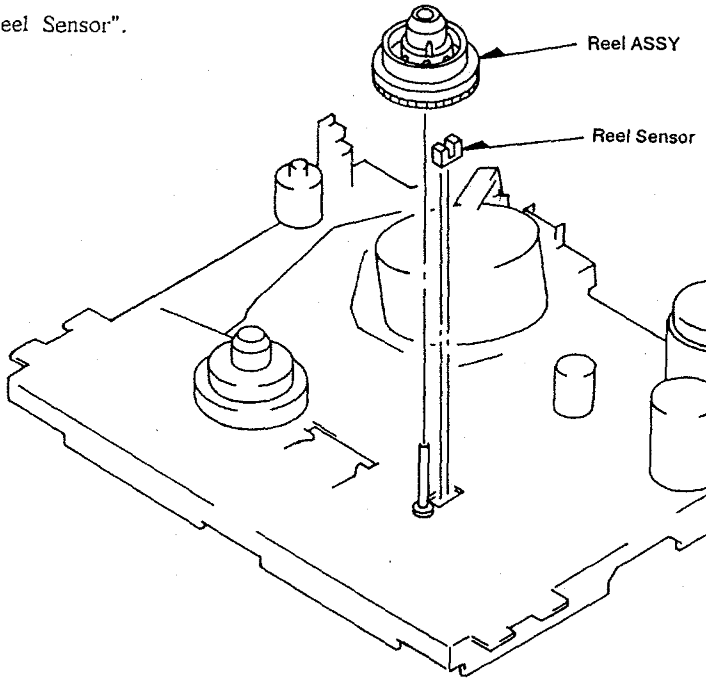

Reel ASSY
Reel Sensor

Fig.-16

19. "Loading Base Semi ASSY" Removal (See Figure – 17)

1) Remove "Cylinder ASSY", "BT Arm Semi ASSY", "BT Band ASSY" and "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and "L Gear Plate Collar", "L Gear Plate".
3) Remove 2 screws (Ⓑ).
4) Take off the "Loading Base Semi ASSY".

= Remark =

When installing the "L Gear Plate", align markings ⓐ on the "T Loading Gear L" and "L Gear Plate".

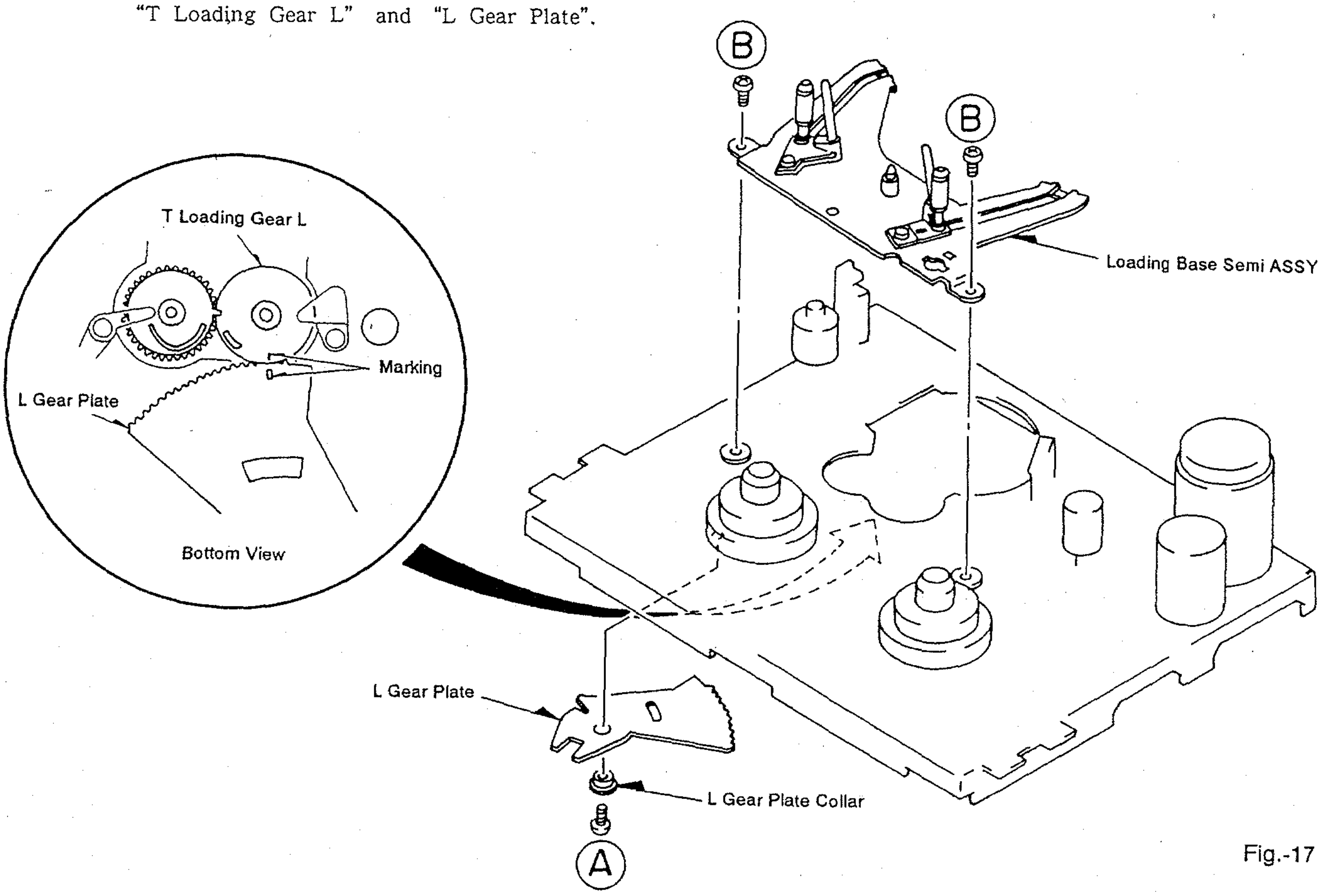

Ⓑ
Ⓑ
Loading Base Semi ASSY
T Loading Gear L
Marking
L Gear Plate
Bottom View
L Gear Plate
L Gear Plate Collar
Ⓐ

Fig.-17

20. "Wormwheel ASSY" Removal (See Figure – 18)

1. Disassembly
   1) Remove "Front Loading ASSY".
   2) Remove "Cassette Load Bracket ASSY".
   3) Remove E – Ring (Ⓐ).
   4) Remove "Wormwheel ASSY." ("Wormwheel", "Friction Spring", "Friction Gear")
2. Assembly
   1) Turn the "Lift Gear R" fully counterclockwise.
   2) Restore "Wormwheel ASSY" to the stud.

      = Remark =

      Match "Lift Gear R" to the "Wormwheel Hole" as illustrated.

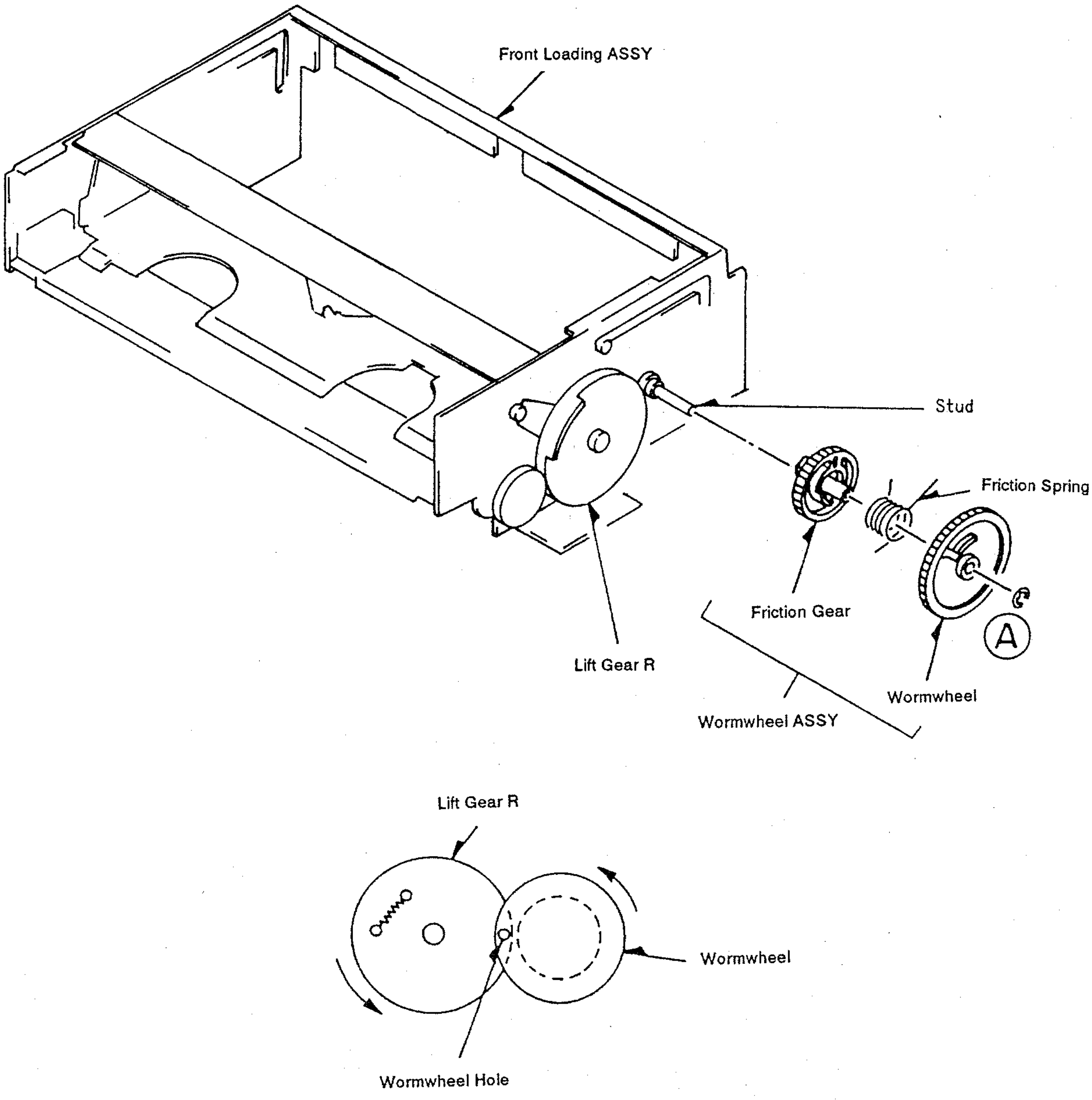

Front Loading ASSY
Stud
Friction Spring
Friction Gear
Ⓐ
Lift Gear R
Wormwheel
Wormwheel ASSY
Lift Gear R
Wormwheel
Wormwheel Hole

Fig-18

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-017-499-019		IC, GL7818
	87-017-496-019		IC, GL7805
	87-002-862-019		IC, NJM2904L
	87-002-806-019		IC, LA7116
	87-002-394-019		IC, LB1641
	87-001-777-019		IC, BA6219B
	87-002-752-019		IC, LA7391
	87-002-981-080		IC, HD14066BFP
	87-002-922-080		IC, HD74HC123AFP
	87-001-771-019		IC, LC8992
	87-001-938-019		IC, LA7311〈EXCEPT F, NZ, K〉
	87-002-449-019		IC, NJM2233S
	87-017-480-019		IC, MM1130XD〈G150SH, DK975〉
	87-002-792-019		IC, LA7376
	87-JUT-634-010		IC, CXP80720
	87-002-749-010		IC, X24C01
	87-017-562-089		IC, PST600JMT
	87-001-970-019		IC, LA7297
	87-017-497-019		IC, GL78M09
	87-002-861-010		IC, CXP2201AS
	87-001-790-010		IC, UNIT SBX1610-52
TRANSISTOR			
	89-419-130-019		TR, 2SD1913
	87-026-463-089		TR, 2SA933S
	89-110-154-089		TR, 2SA1015Y
	87-026-215-089		TR, DTC114YS
	87-026-211-089		C-TR, DTA144EK(16)
	87-026-210-089		C-TR, DTC144EK(26)
	89-327-125-089		C-TR, 2SC2712GR(LG)
	89-111-625-089		C-TR, 2SA1162GR(SG)
	89-109-521-089		TR, 2SA952K
	87-026-239-089		C-TR, DTC114TK(04)
	89-322-746-089		TR, 2SC2274F
	89-318-155-089		TR, 2SC1815GR
	89-110-155-089		TR, 2SA1015GR
	87-026-269-089		TR, DTA114ES
DIODE			
	87-017-011-089		DIODE, 1N4003L
	87-020-465-089		DIODE, 1SS133
	87-002-864-089		ZENER, HZ33-2
	87-017-495-089		DIODE, 1N5393
	87-027-474-089		ZENER, HZ11A2
	87-027-393-089		ZENER, HZ4C2
	87-020-027-089		C-DIODE, 1SS184(B3)
	87-020-125-089		C-DIODE, 1SS181(A3)
	87-017-519-089		ZENER, HZT33
	87-027-555-089		ZENER, HZ5C2
MAIN C.B			
C201	87-010-196-089		C-CAP, S 0.1-25 F
C202	87-010-196-089		C-CAP, S 0.1-25 F
C203	87-018-209-089		CAP, TC-U 0.1-50 F
C204	87-018-209-089		CAP, TC-U 0.1-50 F
C205	87-018-209-089		CAP, TC-U 0.1-50 F
C206	87-018-209-089		CAP, TC-U 0.1-50 F
C207	87-010-384-089		CAP, E 100-25 SME
C208	87-010-196-089		C-CAP, S 0.1-25 F
C209	87-016-281-089		CAP, E 4.7-50(BP)
C212	87-010-196-089		C-CAP, S 0.1-25 F
C213	87-010-379-089		CAP, E 22-16 SME
C214	87-010-405-089		CAP, E 10-50 SME
C215	87-010-197-089		C-CAP, S 0.01-25 B
C218	87-010-374-089		CAP, E 47-10
C219	87-010-263-089		CAP, E 100-10
C220	87-010-196-089		C-CAP, S 0.1-25 F
C221	87-010-178-089		C-CAP, S 1000P-50 B
C222	87-010-405-089		CAP, E 10-50 SME
C223	87-010-405-089		CAP, E 10-50 SME
C224	87-010-197-089		C-CAP, S 0.01-25 B
C225	87-010-178-089		C-CAP, S 1000P-50 B
C226	87-010-405-089		CAP, E 10-50 SME
C227	87-010-197-089		C-CAP, S 0.01-25 B
C228	87-010-405-089		CAP, E 10-50 SME
C229	87-010-197-089		C-CAP, S 0.01-25 B
C230	87-010-112-089		CAP, E 100-16
C231	87-010-186-089		C-CAP, S 4700P-50 B
C250	87-010-180-089		C-CAP, S 1500P-50 B
C251	87-010-186-089		C-CAP, S 4700P-50 B
C252	87-010-196-089		C-CAP, S 0.1-25 F
C253	87-010-196-089		C-CAP, S 0.1-25 F
C254	87-010-404-089		CAP, E 4.7-50 SME
C255	87-016-040-089		CAP, 0.047-5.5 FM
C256	87-010-405-089		CAP, E 10-50 SME
C257	87-010-196-089		C-CAP, S 0.1-25 F
			〈G150SH, DK975〉
C258	87-010-405-089		CAP, E 10-50 SME
C259	87-010-375-089		CAP, E 330-10 SME
C260	87-010-382-089		CAP, E 22-25 SME
C301	87-012-157-089		C-CAP, S 330P-50 CH
C302	87-010-322-089		C-CAP, S 100P-50 CH
C303	87-010-150-089		C-CAP, S 6P-50 CH
C304	87-010-405-089		CAP, E 10-50 SME
C305	87-010-405-089		CAP, E 10-50 SME
C307	87-010-197-089		C-CAP, S 0.01-25 B
C308	87-010-403-089		CAP, E 3.3-50 SME
C309	87-010-198-089		C-CAP, S 0.022-25 B
C310	87-010-263-089		CAP, E 100-10
C311	87-010-405-089		CAP, E 10-50 SME
C312	87-010-198-089		C-CAP, S 0.022-25 B
C313	87-012-156-089		C-CAP, S 220P-50 CH
C314	87-010-322-089		C-CAP, S 100P-50 CH
C315	87-010-317-089		C-CAP, S 39P-50 CH
C316	87-010-321-089		C-CAP, S 82P-50 CH
C317	87-010-196-089		C-CAP, S 0.1-25 F
C318	87-010-198-089		C-CAP, S 0.022-25 B
C319	87-010-318-089		C-CAP, S 47P-50 CH
C320	87-010-197-089		C-CAP, S 0.01-25 B
C321	87-010-374-089		CAP, E 47-10
C322	87-010-405-089		CAP, E 10-50 SME
C324	87-010-405-089		CAP, E 10-50 SME
C330	87-010-405-089		CAP, E 10-50 SME
C331	87-010-405-089		CAP, E 10-50 SME
C332	87-010-405-089		CAP, E 10-50 SME
C333	87-010-154-089		C-CAP, S 10P-50 CH
C335	87-012-145-089		C-CAP, S 270P-50 CH
C336	87-012-155-089		C-CAP, S 180P-50 CH
C338	87-010-197-089		C-CAP, S 0.01-25 B
C339	87-010-149-089		C-CAP, S 5P-50 CH
C340	87-010-312-089		C-CAP, S 15P-50 CH
C341	87-010-197-089		C-CAP, S 0.01-25 B
C342	87-010-319-089		C-CAP, S 56P-50 CH
C343	87-010-322-089		C-CAP, S 100P-50 CH
C344	87-012-157-089		C-CAP, S 330P-50 CH
C346	87-010-196-089		C-CAP, S 0.1-25 F
C347	87-010-263-089		CAP, E 100-10
C348	87-010-401-089		CAP, E 1-50 SME
C349	87-010-404-089		CAP, E 4.7-50 SME
C350	87-010-709-089		CAP, E 0.22-50 BP
C351	87-010-197-089		C-CAP, S 0.01-25 B
C352	87-010-197-089		C-CAP, S 0.01-25 B
C353	87-010-318-089		C-CAP, S 47P-50 CH
C354	87-010-149-089		C-CAP, S 5P-50 CH
C355	87-010-318-089		C-CAP, S 47P-50 CH
C372	87-010-198-089		C-CAP, S 0.022-25 B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C373	87-010-401-089		CAP, E 1-50 SME
C374	87-010-314-089		C-CAP, S 22P-50 CH 〈G150SH, DK975〉
C376	87-010-196-089		C-CAP, S 0.1-25 F
C378	87-010-321-089		C-CAP, S 82P-50 CH
C379	87-012-154-089		C-CAP, S 150P-50 CH
C401	87-010-194-089		C-CAP, S 0.047-25 F
C402	87-010-198-089		C-CAP, S 0.022-25 B
C403	87-010-401-089		CAP, E 1-50 SME
C404	87-010-194-089		C-CAP, S 0.047-25 F
C405	87-010-401-089		CAP, E 1-50 SME
C406	87-010-320-089		C-CAP, S 68P-50 CH
C407	87-010-196-089		C-CAP, S 0.1-25 F
C408	87-010-263-089		CAP, E 100-10
C410	87-010-198-089		C-CAP, S0.022-25 B
C411	87-010-194-089		C-CAP, S 0.047-25 F
C412	87-010-198-089		C-CAP, S 0.022-25 B
C413	87-010-401-089		CAP, E 1-50 SME
C414	87-010-401-089		CAP, E 1-50 SME
C415	87-012-156-089		C-CAP, S 220P-50 CH
C416	87-012-154-089		C-CAP, S 150P-50 CH
C417	87-010-197-089		C-CAP, S 0.01-25 B
C418	87-010-197-089		C-CAP, S 0.01-25 B
C421	87-010-197-089		C-CAP, S 0.01-25 B
C422	87-010-197-089		C-CAP, S 0.01-25 B
C423	87-010-197-089		C-CAP, S 0.01-25 B
C424	87-010-197-089		C-CAP, S 0.01-25 B 〈EXCEPT F, NZ, K〉
C425	87-010-197-089		C-CAP, S 0.01-25 B 〈EXCEPT F, NZ, K〉
C428	87-010-197-089		C-CAP, S 0.01-25 B 〈EXCEPT F, NZ, K〉
C429	87-010-263-089		CAP, E 100-10〈EXCEPT F, NZ, K〉
C430	87-010-403-089		CAP, E 3.3-50 SME 〈EXCEPT F, NZ, K〉
C431	87-010-404-089		CAP, E 4.7-50 SME 〈EXCEPT F, NZ, K〉
C432	87-010-248-089		CAP, E 220-10 SME 〈EXCEPT F, NZ, K〉
C440	87-010-197-089		C-CAP, S 0.01-25 B
C441	87-010-320-089		C-CAP, S 68P-50 CH
C442	87-012-154-089		C-CAP, S 150P-50 CH
C443	87-010-321-089		C-CAP, S 82P-50 CH
C445	87-010-403-089		CAP, E 3.3-50 SME 〈EXCEPT F, NZ, K〉
C446	87-010-196-089		C-CAP, S 0.1-25 F
C501	87-010-405-089		CAP, E 10-50 SME
C502	87-010-405-089		CAP, E 10-50 SME
C504	87-010-405-089		CAP, E 10-50 SME
C505	87-010-374-089		CAP, E 47-10
C506	87-010-198-089		C-CAP, S 0.022-25 B
C507	87-010-374-089		CAP, E 47-10
C508	87-010-198-089		C-CAP, S 0.022-25 B
C510	87-010-381-089		CAP, E 330-16 SME
C511	87-010-198-089		C-CAP, S 0.022-25 B
C522	87-010-265-089		CAP, E 33-16 SME
C523	87-010-371-089		CAP, E 470-6.3
C525	87-010-196-089		C-CAP, S 0.1-25 F
C526	87-010-196-089		C-CAP, S 0.1-25 F
C551	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C552	87-010-185-089		C-CAP, S 3900P-50 B 〈G150SH, DK975〉
C553	87-010-403-089		CAP, E 3.3-50 SME 〈G150SH, DK975〉
C554	87-010-175-089		C-CAP, S 560P-50 SL 〈G150SH, DK975〉
C555	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C556	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C557	87-012-150-089		C-CAP, S 20P-50 CH 〈G150SH, DK975〉
C558	87-012-150-089		C-CAP, S 20P-50 CH 〈G150SH, DK975〉
C559	87-010- -089		CAP, E 4.7-25 SME 〈G150SH, DK975〉
C560	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C561	87-010-316-089		C-CAP, S 33P-50 CH 〈G150SH, DK975〉
C562	87-010-315-089		C-CAP, S 27P-50 CH 〈G150SH, DK975〉
C563	87-010-149-089		C-CAP, S 5P-50 CH 〈G150SH, DK975〉
C564	87-010-401-089		CAP, E 1-50 SME〈G150SH, DK975〉
C565	87-010-198-089		C-CAP, S 0.022-25 B 〈G150SH, DK975〉
C566	87-010-154-089		C-CAP, S 10P-50 CH 〈G150SH, DK975〉
C567	87-012-150-089		C-CAP, S 20P-50 CH 〈G150SH, DK975〉
C587	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C588	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C589	87-010-197-089		C-CAP, S 0.01-25 B 〈G150SH, DK975〉
C651	87-010-196-089		C-CAP, S 0.1-25 F
C652	87-010-263-089		CAP, E 100-10
C653	87-010-315-089		C-CAP, S 27P-50 CH
C654	87-010-313-089		C-CAP, S 18P-50 CH
C655	87-010-196-089		C-CAP, S 0.1-25 F
C656	87-010-112-089		CAP, E 100-16
C657	87-010-196-089		C-CAP, S 0.1-25 F
C658	87-010-312-089		C-CAP, S 15P-50 CH
C659	87-010-312-089		C-CAP, S 15P-50 CH
C660	87-010-197-089		C-CAP, S 0.01-25 B
C661	87-010-197-089		C-CAP, S 0.01-25 B
C701	87-010-405-089		CAP, E 10-50 SME
C702	87-010-384-089		CAP, E 100-25 SME
C703	87-010-197-089		C-CAP, S 0.01-25 B
C704	87-010-265-089		CAP, E 33-16 SME
C705	87-010-404-089		CAP, E 4.7-50 SME
C707	87-010-198-089		C-CAPS, S 0.022-25 V
C709	87-010-544-089		CAP, E 0.1-50
C710	87-010-405-089		CAP, E 10-50 SME
C712	87-010-379-089		CAP, E 22-16 SME
C713	87-012-155-089		C-CAP, S 180P-50 CH
C715	87-010-401-089		CAP, E 1-50 SME
C717	87-010-379-089		CAP, E 22-16 SME
C718	87-010-401-089		CAP, E 1-50 SME
C719	87-010-176-089		C-CAP, S 680P-50
C720	87-010-179-089		C-CAP, S 1200P-50
C721	87-010-179-089		C-CAP, S 1200P-50
C722	87-010-197-089		C-CAP, S 0.01-25 B
C723	87-010-260-089		CAP, E 47-25 SME
C724	87-010-197-089		C-CAP, S 0.01-25 B
C725	87-010-178-089		C-CAP, S 1000P-50 B
C727	87-012-156-089		C-CAP, S 220P-50 CH
C728	87-010-405-089		CAP, E 10-50 SME
C729	87-010-405-089		CAP, E 10-50 SME
C730	87-010-405-089		CAP, E 10-50 SME
C731	87-010-260-089		CAP, E 47-25 SME
C732	87-010-197-089		C-CAP, S 0.01-25 B
C801	87-010-374-089		CAP, E 47-10
C802	87-010-374-089		CAP, E 47-10
C808	87-010-404-089		CAP, E 4.7-50 SME〈EXCEPT K〉
C809	87-018-209-089		CAP, TC-U 0.1-50 F
C810	87-010-404-089		CAP, E 4.7-50 SME〈EXCEPT K〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C811	87-010-404-089		CAP, E 4. 7-50 SME
C812	87-010-404-089		CAP, E 4. 7-50 SME〈EXCEPT K〉
C813	87-010-401-089		CAP, E 1-50 SME
C814	87-010-384-089		CAP, E 100-25 SME
C815	87-010-260-089		CAP, E 47-25 SME
C816	87-018-209-089		CAP, TC-U 0. 1-50 F
C817	87-012-157-089		C-CAP, S 330P-50 CH
C821	87-018-209-089		CAP, TC-U 0. 1-50 F
C822	87-010-197-089		C-CAP, S 0. 01-25 B
C823	87-010-384-089		CAP, E 100-25 SME
C824	87-010-194-089		C-CAP, S 0. 047-25 F
C827	87-010-197-089		C-CAP, S 0. 01-25 B
C831	87-010-194-089		C-CAP, S 0. 047-25 F
C839	87-010-405-089		CAP, E 10-50 SME
C840	87-010-197-089		C-CAP, S 0. 01-25 B
C842	87-010-197-089		C-CAP, S 0. 01-25 B〈EXCEPT K〉
C843	87-010-197-089		C-CAP, S 0. 01-25 B〈EXCEPT K〉
C844	87-010-197-089		C-CAP, S 0. 01-25 B
C846	87-010-197-089		C-CAP, S 0. 01-25 B〈EXCEPT K〉
C847	87-010-196-089		C-CAP, S 0. 1-25 F
C848	87-010-197-089		C-CAP, S 0. 01-25 B
C849	87-010-197-089		C-CAP, S 0. 01-25 B
C850	87-010-196-089		C-CAP, S 0. 1-25 F
C851	87-010-198-089		C-CAP, S 0. 022-25 B
DL401	80-JUB-676-019		DL, ADL-FE2544W
DL582	80-JUB-675-019		DL, ADL-FN1344W〈G150SH, DK975〉
J501	87-009-174-010		JACK, PIN 4P YBYB 〈EXCEPT K, SE2, SE1, AE〉
L201	87-006-189-089		COIL, 220UH EL0909
L202	87-006-189-089		COIL, 220UH EL0909
L203	87-005-152-089		COIL, 10UH LAL03
L301	87-005-602-089		COIL, 10UH LAV35 J
L302	87-005-736-089		COIL, 33UH J SP02
L304	87-005-736-089		COIL, 33UH J SP02
L305	87-005-736-089		COIL, 33UH J SP02
L306	87-005-739-089		COIL, 56UH J SP02
L307	87-005-745-089		COIL, 180UH J SP02
L308	87-005-736-089		COIL, 33UH J SP02
L309	87-005-730-089		COIL, 10UH J SP02
L310	87-005-730-089		COIL, 10UH J SP02
L311	87-005-745-089		COIL, 180UH J SP02
L312	87-005-614-089		COIL, 100UH LAV35 J
L313	87-005-741-089		COIL, 82UH J SP02
L402	87-005-620-089		COIL, 330UH LAV35 J
L403	87-005-620-089		COIL, 330UH LAV35 J
L404	87-005-732-089		COIL, 15UH J SP02
L406	87-005-208-089		COIL, 100UH J 〈EXCEPT F, NZ, K〉
L407	87-005-724-089		COIL, 3. 3UH J SP02
L409	87-005-746-089		COIL, 220UH J SP02
L410	87-005-730-089		COIL, 10UH J SP02
L502	87-005-610-089		COIL, 47UH LAV35 J
L551	87-005-736-089		COIL, 33UH J SP02 〈G150SH, DK975〉
L582	87-005-732-089		COIL, 15UH J SP02 〈G150SH, DK975〉
L583	87-005-732-089		COIL, 15UH J SP02 〈G150SH, DK975〉
L651	87-005-610-089		COIL, 47UH LAV35 J
L652	87-005-152-089		COIL, 10UH LAL03
L701	87-005-614-089		COIL, 100UH LAV35 J
L702	87-005-398-089		COIL, 8. 2MH LHL06
L801	87-005-610-089		COIL, 47UH LAV35 J
L802	87-005-610-089		COIL, 47UH LAV35 J
L804	87-005-610-089		COIL, 47UH LAV35 J
L805	87-005-610-089		COIL, 47UH LAV35 J
L806	87-005-738-089		COIL, 47UH J SP02
L808	87-005-610-089		COIL, 47UH LAV35 J
PIF801	81-JU6-623-018		PIF PAC, TBME1〈AE〉
PIF801	81-JU6-624-018		PIF PAC, TBMB1〈K〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PIF801	82-JU2-628-019		PIF PAC, D1-003B 〈G100SH, G150SH〉
PIF801	82-JU6-638-018		PIF PAC, TBMD1〈SE2, SE1〉
⚠R201	87-029-142-019		RES, FUSE 3. 3-1/2W J
⚠R202	87-029-142-019		RES, FUSE 3. 3-1/2W J
⚠R203	87-029-082-099		RES, FUSE 100-1/4W FM
R228	87-025-459-089		RES, M/F 15K-1/4W ERO
R229	87-025-459-089		RES, M/F 15K-1/4W ERO
⚠R527	87-029-140-019		RES, FUSE 33-1/4W ERQ
RF801	80-JU4-631-019		RF MOD, D720A〈G100SH, G150SH〉
RF801	81-JU6-621-018		RF MOD, B583 AG〈K〉
RF801	81-JU6-622-018		RF MOD, D633 AG〈SE2, SE1〉
RF801	89-JU5-689-019		RF MOD, E765A〈DK925, DK975〉
RF801	89-JU5-694-010		RF MOD, B767A〈F〉
RF801	89-JU6-610-010		RF MOD, D123A〈NZ〉
SFR201	87-024-434-089		SFR, 22K RH063EC
SFR202	87-024-434-089		SFR, 22K RH063EC〈G150SH, DK975〉
SFR301	87-024-433-089		SFR, 10K RH063EC
SFR302	87-024-432-089		SFR, 4. 7K RH063EC
SFR303	87-024-433-089		SFR, 10K RH063EC
SFR304	87-024-429-089		SFR, 1K RH063EC
SFR305	87-024-434-089		SFR, 22K RH063EC
SFR306	87-024-432-089		SFR, 4. 7K RH063EC
SFR401	87-024-429-089		SFR, 1K RH063EC
T701	82-JU6-637-019		COIL, OSC AUD
TU801	80-JU2-611-119		TV TU, 33-RC01〈DK925, DK975〉
TU801	89-JU5-674-010		TV TU, 4EC-721〈F〉
TU801	89-JU5-679-010		TV TU, 4EA-721〈NZ〉
VIF801	80-JU2-610-010		VIF PAC, 01A-02〈NZ〉
VIF801	80-JU4-644-019		VIF PAC, 02M-03〈DK925, DK975〉
VIF801	80-JU5-675-110		VIF PAC, I01S〈F〉
X401	83-JU3-664-089		VIB, XTAL 4. 43M
X551	83-JU3-665-089		VIB, XTAL 8. 86MHZ 〈G150SH, DK975〉
X651	83-JU3-667-089		VIB, XTAL 12. 0M
X652	87-030-273-019		VIB, XTAL 32. 768K5PPM

FRONT C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C900	87-015-682-089		CAP, E 22-16 7L
C901	87-018-209-089		CAP, TC-U 0. 1-50 F
C902	87-018-209-089		CAP, TC-U 0. 1-50 F
C903	87-010-244-089		CAP, E 22-16 5L
C904	87-018-208-089		CAP, TC-U 0. 047-50 F
C905	87-010-498-089		CAP, E 10-16 5L
C906	87-010-198-089		C-CAP, S 0. 022-25 B
CL900	87-030-198-089		VIB, CER KBR-4. 0MKS
CN900	87-009-341-019		CONN, 12P HBRK 12R-2
D934	87-002-863-080		LED, LT3S43B
D935	87-002-863-080		LED, LT3S43B
FL900	82-JU6-632-019		FL, 10-MT46GK
L900	87-005-742-089		COIL, 100UH J SP02
L901	87-005-742-089		COIL, 100UH J SP02
L902	87-005-742-089		COIL, 100UH J SP02
SW900	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW901	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW902	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW903	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW904	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW905	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW906	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW907	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW908	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW900	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW901	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW902	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
SW903	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW904	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW905	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW906	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW907	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW908	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW912	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW913	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW914	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW915	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW916	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW917	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW918	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW912	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW913	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW914	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW915	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW916	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW917	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW918	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW920	87-036-259-089		SW, TACT SKHVBB〈NZ〉
SW921	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW922	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW923	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW924	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW925	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW926	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW927	87-036-170-088		SW, TACT〈SE2, SE1, AE, K〉
SW921	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW922	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW923	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW924	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW925	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW926	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW927	87-036-259-089		SW, TACT SKHVBB 〈EXCEPT SE2, SE1, AE, K〉
SW928	87-036-170-088		SW, TACT〈SE2, SE1, AE〉
SW928	87-036-259-089		SW, TACT 〈G100SH, DK925, G150SH, DK975〉
SW931	87-036-283-019		SW, SL 2-2-2 SSS U022 〈G150SH, DK975〉

HEAD AMP C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C603	87-010-196-089		C-CAP, S 0. 1-25 F
C604	87-010-196-089		C-CAP, S 0. 1-25 F
C605	87-010-197-089		C-CAP, S 0. 01-25 B
C606	87-010-196-089		C-CAP, S 0. 1-25 F
C607	87-010-196-089		CAP, TC-U 0. 1-25 F
C608	87-010-196-089		CAP, TC-U 0. 1-25 F
C609	87-018-134-089		CAP, TC-U 0. 01-16 Y
C610	87-018-106-089		CAP, TC-U 15P-50 SL
C611	87-010-313-089		C-CAP, S 18P-50 CH
C612	87-010-318-089		C-CAP, S 47P-50 CH
C613	87-010-196-089		C-CAP, S 0. 1-25 F
C614	87-010-263-089		CAP, E 100-10
C615	87-010-198-089		C-CAP, S 0. 022-25 B
C616	87-010-374-089		CAP, E 47-10
C617	87-010-197-089		C-CAP, S 0. 01-25 B
C618	87-010-197-089		C-CAP, S 0. 01-25 B
CN601	87-009-998-019		CONN, 13P SBRK 13R-5
CN602	87-009-175-010		CONN, 6P IL-SDD F
L601	87-005-610-089		COIL, 47UH LAV35 J
L603	87-005-734-089		COIL, 22UH J SP02
L604	87-005-738-089		COIL, 47UH J SP02

RELAY-1 C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-D	S8-059-013-470		RELAY-1 PCB ASSY

RELAY-2 C. B

RELAY-3 C. B

RELAY-4 C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-G	S8-059-013-050		RELAY-4 PCB ASSY

RELAY-5 C. B

BASE C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
CP1	S6-808-080-030		PHOTO SENSOR ON1385
PCB-I	S8-059-133-020		BASE PCB ASSY

SWITCH C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-J	S8-059-163-200		SWITCH PCB ASSY

START SENSOR C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-K	S8-059-163-010		SENSOR PCB RM ASSY

END SENSOR C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-L	S8-059-163-010		SENSOR PCB LM ASSY

LED C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
LED1	S8-059-133-030		LED ASSY (W/PCB-M)

ACE HEAD C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
ACEH	S6-204-150-080		ACE HEAD HV224206

ERASE HEAD C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
FEH	S6-204-150-030		FULL ERASE HEAD

UR C. B〈SE2, SE1, AE, K〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
CN552	87-009-957-018		CONN 21P

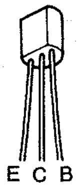
POWER C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠AC101	87-009-329-019		JACK, AC E CCT9302
C101	87-010-399-099		CAP, E 3300-35 SME
C102	87-010-384-089		CAP, E 100-25 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C103	87-010-112-089		CAP, E 100-16
C104	87-010-263-089		CAP, E 100-10
C105	87-016-054-099		CAP, E 10000-16 SME
C106	87-010-263-089		CAP, E 100-10
C107	87-010-430-089		CAP, ELECT(TAPG) 100-63V
C108	87-010-430-089		CAP, ELECT(TAPG) 100-63V
C109	87-010-393-089		CAP, E 100-35 SME
C110	87-010-764-089		CAP, E 47-63 SME
⚠F101	87-035-360-019		FUSE, 630MA 250V T E
⚠F102	87-035-365-019		FUSE, 2A 250V T E
⚠F103	87-035-365-019		FUSE, 2A 250V T E
⚠L101	87-030-274-019		FLTR, LF-4D-333
R101	87-025-463-089		RES, M/F 56K-1/4W ERO
R102	87-025-460-089		RES, M/F 39K-1/4W ERO
⚠R105	87-029-140-019		RES, FUSE 33-1/4W ERQ

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠R106	87-029-119-019		RES, FUSE 100-1/4W FM
⚠R109	87-029-070-099		RES, FUSE 2.2-1.4W FM
⚠SW101	87-036-317-019		SW, SL2-2-3 SAKGA4-R
⚠T101	82-JU6-634-018		PT, E 230V〈EXCEPT K〉
⚠T101	82-JU6-639-018		PT, KNE 240V〈K〉
MISCELLANEOUS			
	S8-059-012-000		UPPER DRUM(W/VIDEO HEAD)
DS1	S6-808-080-040		DEW SENSOR EYH-S10R
M1	S6-004-030-240		DRUM MOTOR TM85
M2	S8-059-073-020		CAPSTAN MOTOR ASSY
M3	S8-059-113-010		LOADING MOTOR ASSY
S4	S6-401-011-510		LEAF SW

TRANSISTORS ILLUSTRATION



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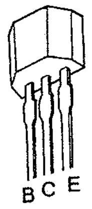
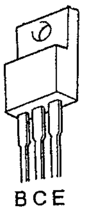
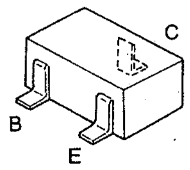
2SA952
2SC1815
2SC2274



2SA933S
DTA114ES
DTC114Y



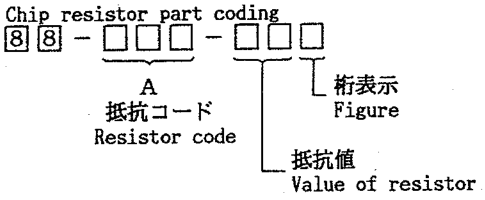
2SD1913



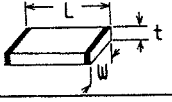
DTA144EK
DTC114TK
DTC144EK
2SA1162
2SC2712

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip resistor part coding



チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm) Form/外形	L	W	t	Resistor Code : A 抵抗コード : A
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

PRACTICAL SERVICE FIGURE

Output Level

Video (Impedance):	1.0 ± 0.2 Vpp (75 ohm ± 10% Unbalance)
Audio (Impedance):	-6±3 dBs (Less than 2.2kohm)
RF Modulated:	75±3 dBμV (75 ohm Unbalance)

Input Level

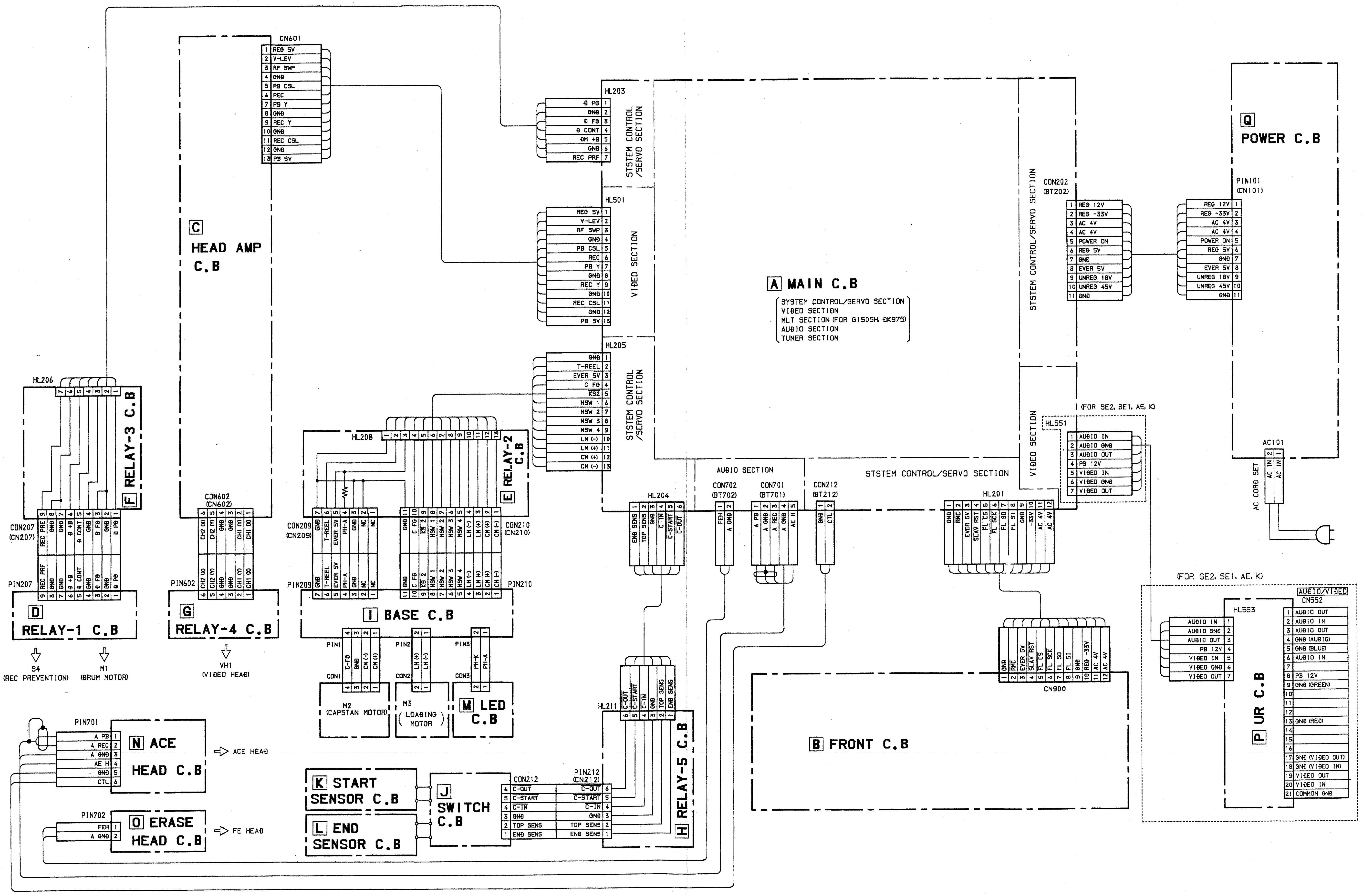
Video (Impedance):	0.5V ~ 2.0V (75 ohm ± 20% Unbalance)
Audio (Impedance):	-8±3 dBs (More than 47kohm)

TV Channels receiving band

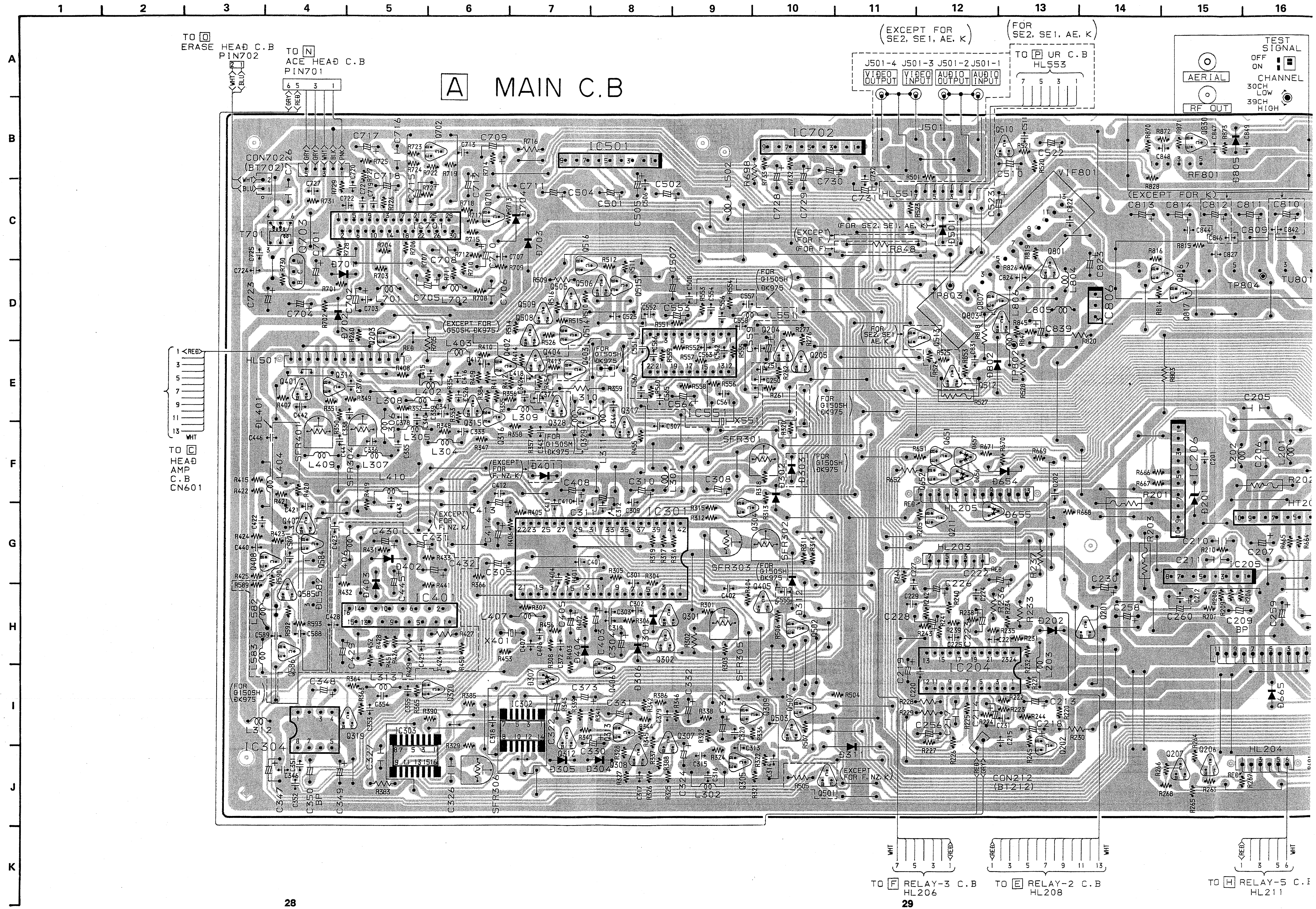
Destination	Country	System	VHF Low	VHF High	UHF	Signal format	
						VHF	UHF
SE SH	Spain Asia, M East	PAL	E2 ~ E4	E5 ~ E12	21 ~ 69	B	G
						VIF 38.9MHz SIF 33.4MHz	
KER	Asia, M East, E Europe	PAL SECAM	E2 ~ R5	C6 ~ E12	21 ~ C57	B	G
						VIF 38.0MHz SIF 32.5MHz	
						D	K
						VIF 38.0MHz SIF 31.5MHz	
AE	Italy	PAL	E2 ~ S2	S3 ~ S20	21 ~ 69	B	G
						VIF 38.9MHz SIF 33.4MHz	
K	UK	PAL	-	-	21 ~ 69	-	I
						VIF 39.5MHz SIF 33.5MHz	
F	S Africa	PAL	-	4 ~ 13	21 ~ 69	I	I
						VIF 38.9MHz SIF 32.9MHz	
NZ	Aus/NZ	PAL	NZ1 ~ 5	5A ~ 12	21 ~ 69	B	G
						VIF 36.875MHz SIF 31.375MHz	

Audio S/N (SP Mode):	More than 36 dB
Audio Frequency Response: (SP Mode)	200Hz ~ 8kHz (±3 dB)
Horizontal Resolution:	More than 230 lines (PAL PB & RPB) More than 220 lines (NTSC PB only)
Erase ratio:	More than 55 dB
Bias Frequency:	70kHz ± 10%
Tape speed:	23.39mm/s (SP Mode) 11.70mm/s (LP Mode)
Wow & Flutter:	Less than 0.4%
F.F time:	Less than 300 sec (E-180)
REW time:	Less than 300 sec (E-180)
Back tension:	46.5±12 g/cm

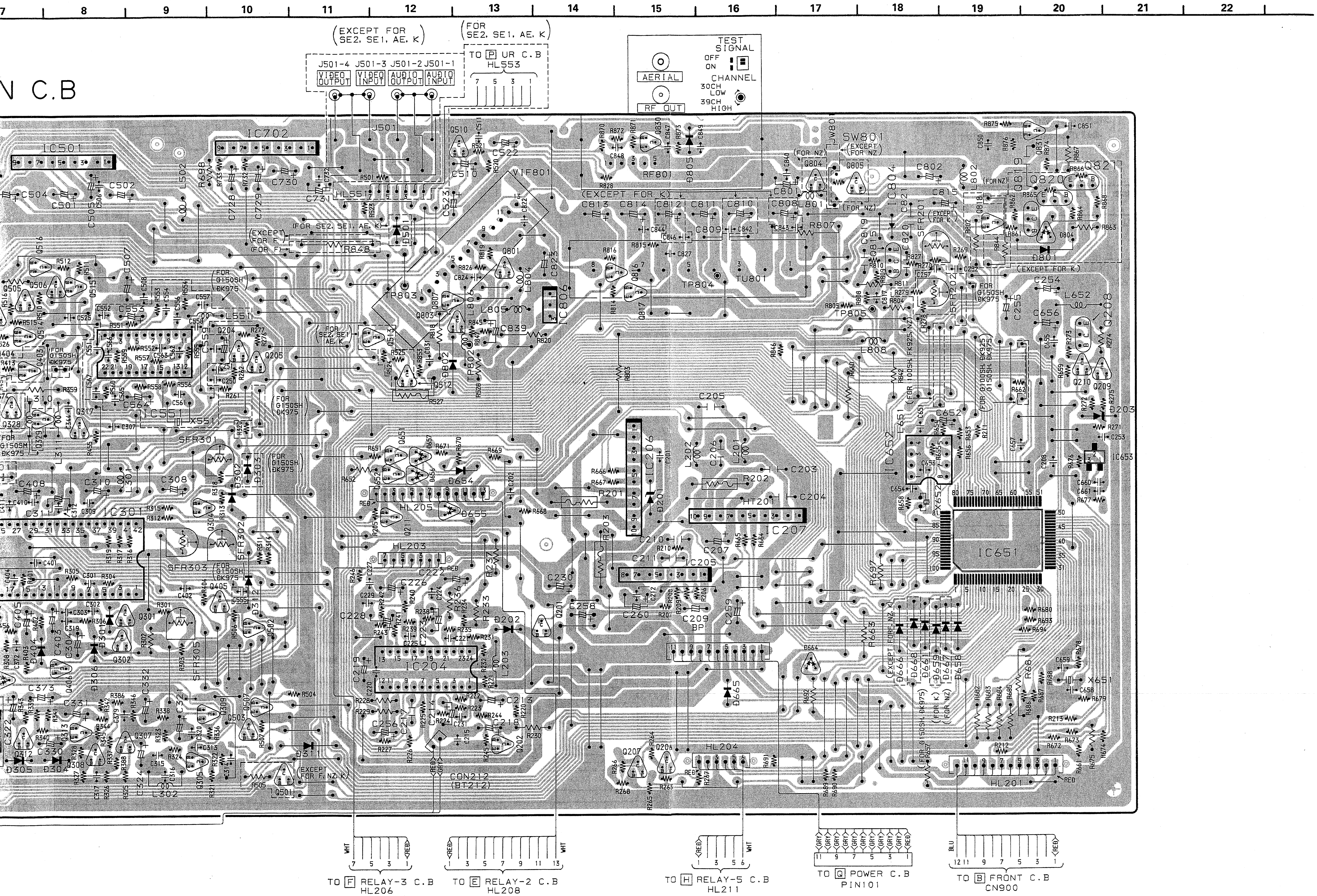
WIRE HARNESS DIAGRAM


CN601
1 REG 5V
2 V-LEV
3 RF SWP
4 GND
5 PB CSL
6 REC
7 PB Y
8 GND
9 REC Y
10 GND
11 REC CSL
12 GND
13 PB 5V
C HEAD AMP C.B
HL203
θ PG 1
GND 2
θ FG 3
θ CONT 4
θM +B 5
GND 6
REC PRF 7
SYSTEM CONTROL /SERVO SECTION
HL501
REG 5V 1
V-LEV 2
RF SWP 3
GND 4
PB CSL 5
REC 6
PB Y 7
GND 8
REC Y 9
GND 10
REC CSL 11
GND 12
PB 5V 13
VIDEO SECTION
HL205
GND 1
T-REEL 2
EVER 5V 3
C FG 4
KS2 5
MSW 1 6
MSW 2 7
MSW 3 8
MSW 4 9
LM (-) 10
LM (+) 11
CM (+) 12
CM (-) 13
SYSTEM CONTROL /SERVO SECTION
A MAIN C.B
SYSTEM CONTROL/SERVO SECTION
VIDEO SECTION
MLT SECTION (FOR G150SH, GK975)
AUDIO SECTION
TUNER SECTION
SYSTEM CONTROL/SERVO SECTION
CON202 (BT202)
1 REG 12V
2 REG -33V
3 AC 4V
4 AC 4V
5 POWER ON
6 REG 5V
7 GND
8 EVER 5V
9 UNREG 18V
10 UNREG 45V
11 GND
Q POWER C.B
PIN101 (CN101)
REG 12V 1
REG -33V 2
AC 4V 3
AC 4V 4
POWER ON 5
REG 5V 6
GND 7
EVER 5V 8
UNREG 18V 9
UNREG 45V 10
GND 11
AC101
AC IN 2
AC IN 1
AC CORD SET
(FOR SE2, SE1, AE, K)
VIDEO SECTION
HL551
1 AUDIO IN
2 AUDIO GND
3 AUDIO OUT
4 PB 12V
5 VIDEO IN
6 VIDEO GND
7 VIDEO OUT
HL206
F RELAY-3 C.B
CON207 (CN207)
9 REC PRF
8 GND
7 GND
6 θ +B
5 θ CONT
4 GND
3 θ FG
2 GND
1 θ PG
PIN207
D RELAY-1 C.B
S4 (REC PREVENTION)
M1 (DRUM MOTOR)
CON602 (CN602)
6 CH2 OO
5 CH2 (Y)
4 GND
3 GND
2 CH1 (Y)
1 CH1 OO
PIN602
G RELAY-4 C.B
VH1 (VIDEO HEAD)
HL208
E RELAY-2 C.B
CON209 (CN209)
7 GND
6 T-REEL
5 EVER 5V
4 PH-A
3 GND
2 NC
1 NC
PIN209
CON210 (CN210)
11 GND
10 C FG
9 KS 2
8 MSW 1
7 MSW 2
6 MSW 3
5 MSW 4
4 LM (-)
3 LM (+)
2 CM (+)
1 CM (-)
PIN210
I BASE C.B
PIN1
4 C-FG
3 GND
2 CM (-)
1 CM (+)
CON1
M2 (CAPSTAN MOTOR)
PIN2
2 LM (+)
1 LM (-)
CON2
M3 (LOADING MOTOR)
PIN3
2 PH-K
1 PH-A
CON3
M LED C.B
HL204
1 END SENS
2 TOP SENS
3 GND
4 C-IN
5 C-START
6 C-OUT
AUDIO SECTION
CON702 (BT702)
1 FEH
2 A GND
CON701 (BT701)
1 A PB
2 A GND
3 A REC
4 A GND
5 AE H
CON212 (BT212)
1 GND
2 CTL
HL201
1 GND
2 RMC
3 EVER 5V
4 SLAV RST
5 FL CS
6 FL SCK
7 FL SO
8 FL SI
9 GND
10 -33V
11 AC 4V
12 AC 4V
CN900
1 GND
2 RMC
3 EVER 5V
4 SLAV RST
5 FL CS
6 FL SCK
7 FL SO
8 FL SI
9 GND
10 REG -33V
11 AC 4V
12 AC 4V
B FRONT C.B
(FOR SE2, SE1, AE, K)
HL553
AUDIO IN 1
AUDIO GND 2
AUDIO OUT 3
PB 12V 4
VIDEO IN 5
VIDEO GND 6
VIDEO OUT 7
AUDIO/VIDEO CN552
1 AUDIO OUT
2 AUDIO IN
3 AUDIO OUT
4 GND (AUDIO)
5 GND (BLUE)
6 AUDIO IN
7
8 PB 12V
9 GND (GREEN)
10
11
12
13 GND (RED)
14
15
16
17 GND (VIDEO OUT)
18 GND (VIDEO IN)
19 VIDEO OUT
20 VIDEO IN
21 COMMON GND
P UR C.B
HL211
6 C-OUT
5 C-START
4 C-IN
3 GND
2 TOP SENS
1 END SENS
H RELAY-5 C.B
PIN212 (CN212)
C-OUT 6
C-START 5
C-IN 4
GND 3
TOP SENS 2
END SENS 1
CON212
6 C-OUT
5 C-START
4 C-IN
3 GND
2 TOP SENS
1 END SENS
J SWITCH C.B
K START SENSOR C.B
L END SENSOR C.B
PIN701
A PB 1
A REC 2
A GND 3
AE H 4
GND 5
CTL 6
N ACE HEAD C.B
ACE HEAD
PIN702
FEH 1
A GND 2
O ERASE HEAD C.B
FE HEAD

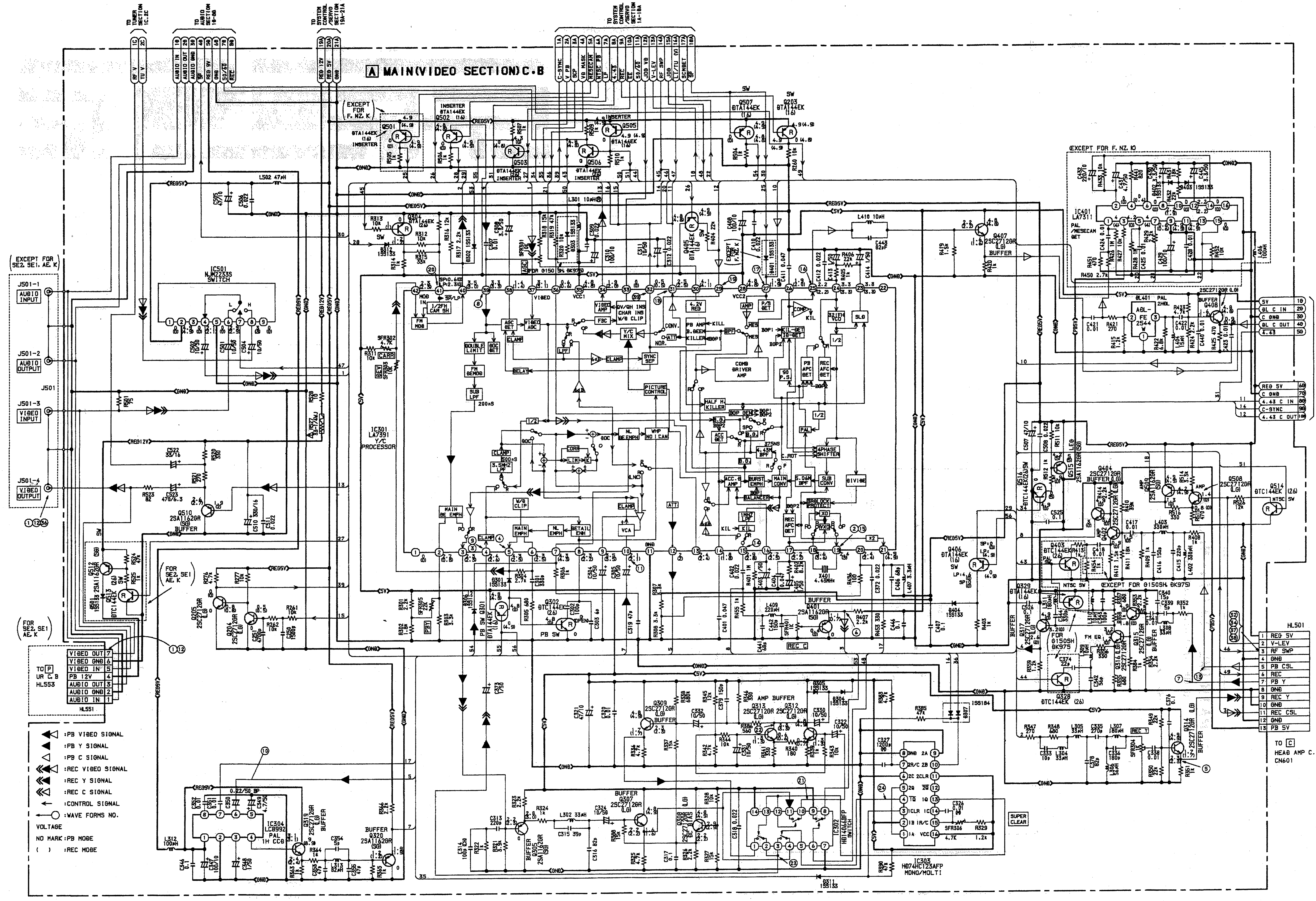
WIRING – 1 (MAIN)

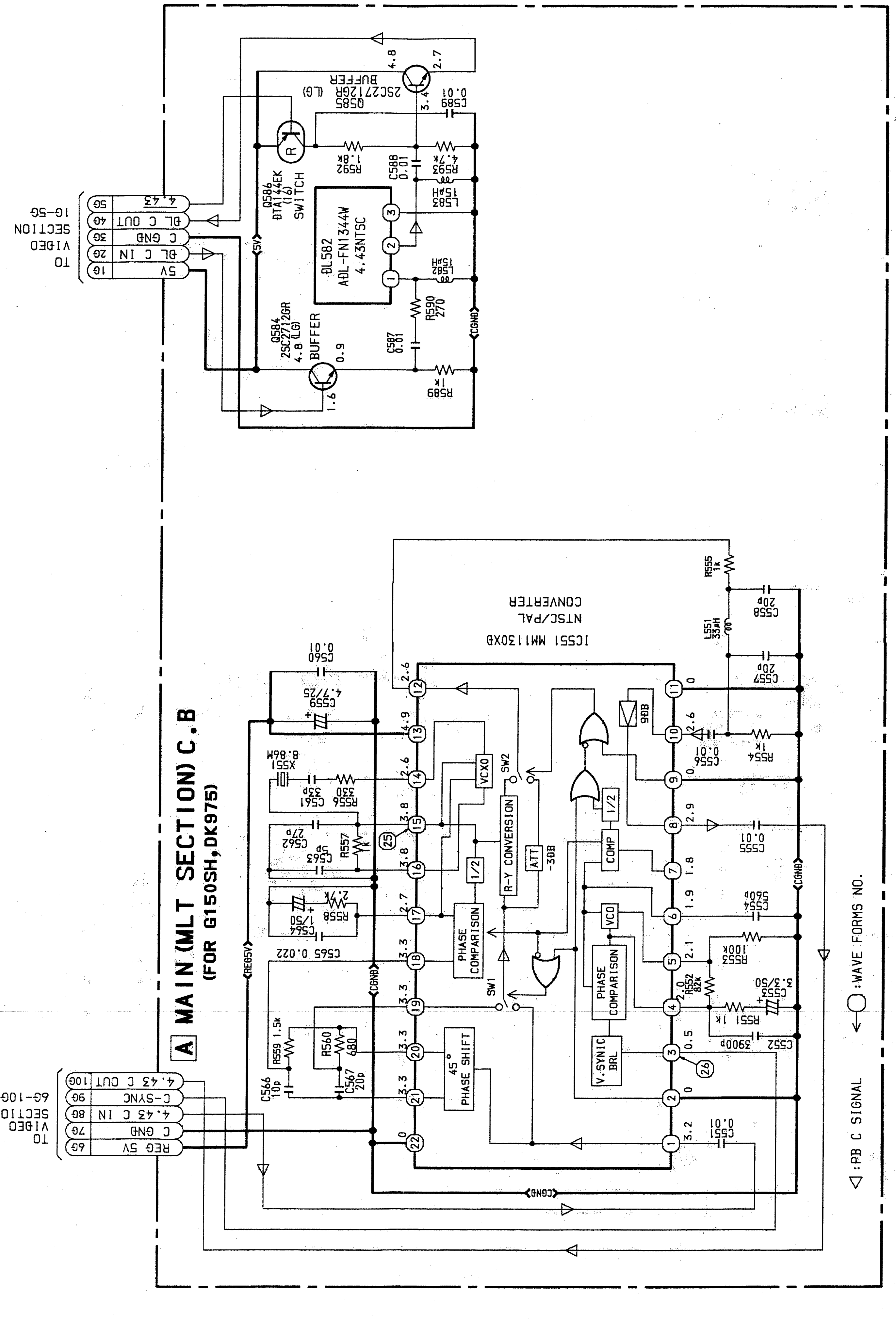

A MAIN C.B
TO O ERASE HEAD C.B PIN702
TO N ACE HEAD C.B PIN701
CON702 (BT702)
(EXCEPT FOR SE2, SE1, AE, K)
(FOR SE2, SE1, AE, K)
J501-4 VIDEO OUTPUT
J501-3 VIDEO INPUT
J501-2 AUDIO OUTPUT
J501-1 AUDIO INPUT
TO P UR C.B HL553
TEST SIGNAL OFF ON
AERIAL
RF OUT
CHANNEL 30CH LOW 39CH HIGH
IC701
IC501
IC702
J501
HL551
VIF801
RF801
(EXCEPT FOR K)
TU801
TP803
TP804
HL501
TO C HEAD AMP C.B CN601
IC301
IC401
IC302
IC303
IC304
IC204
IC205
IC206
HL205
HL203
HL204
CON212 (BT212)
TO F RELAY-3 C.B HL206
TO E RELAY-2 C.B HL208
TO H RELAY-5 C.B HL211

N C.B


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
(EXCEPT FOR SE2, SE1, AE, K)
(FOR SE2, SE1, AE, K)
J501-4 J501-3 J501-2 J501-1
VIDEO OUTPUT
VIDEO INPUT
AUDIO OUTPUT
AUDIO INPUT
TO P UR C.B HL553
7 5 3 1
TEST SIGNAL
OFF ON
AERIAL
RF OUT
CHANNEL
30CH LOW
39CH HIGH
IC501
IC702
J501
VIF801
RF801
SW801
TU801
TP803
TP804
TP805
IC806
IC551
IC301
SFR301
SFR302
SFR303
SFR305
HL205
HL203
IC204
IC206
IC207
IC205
HT201
IC652
IC651
IC653
X651
X652
HL204
HL201
CON212 (BT212)
(EXCEPT FOR K)
(FOR NZ)
(EXCEPT FOR NZ)
(FOR G150SH, ÐK975)
(EXCEPT FOR F, NZ, K)
WHT
RED
7 5 3 1
TO F RELAY-3 C.B HL206
1 3 5 7 9 11 13
TO E RELAY-2 C.B HL208
1 3 5 6
TO H RELAY-5 C.B HL211
GRY
11 9 7 5 3 1
TO Q POWER C.B PIN101
BLU
12 11 9 7 5 3 1
TO B FRONT C.B CN900

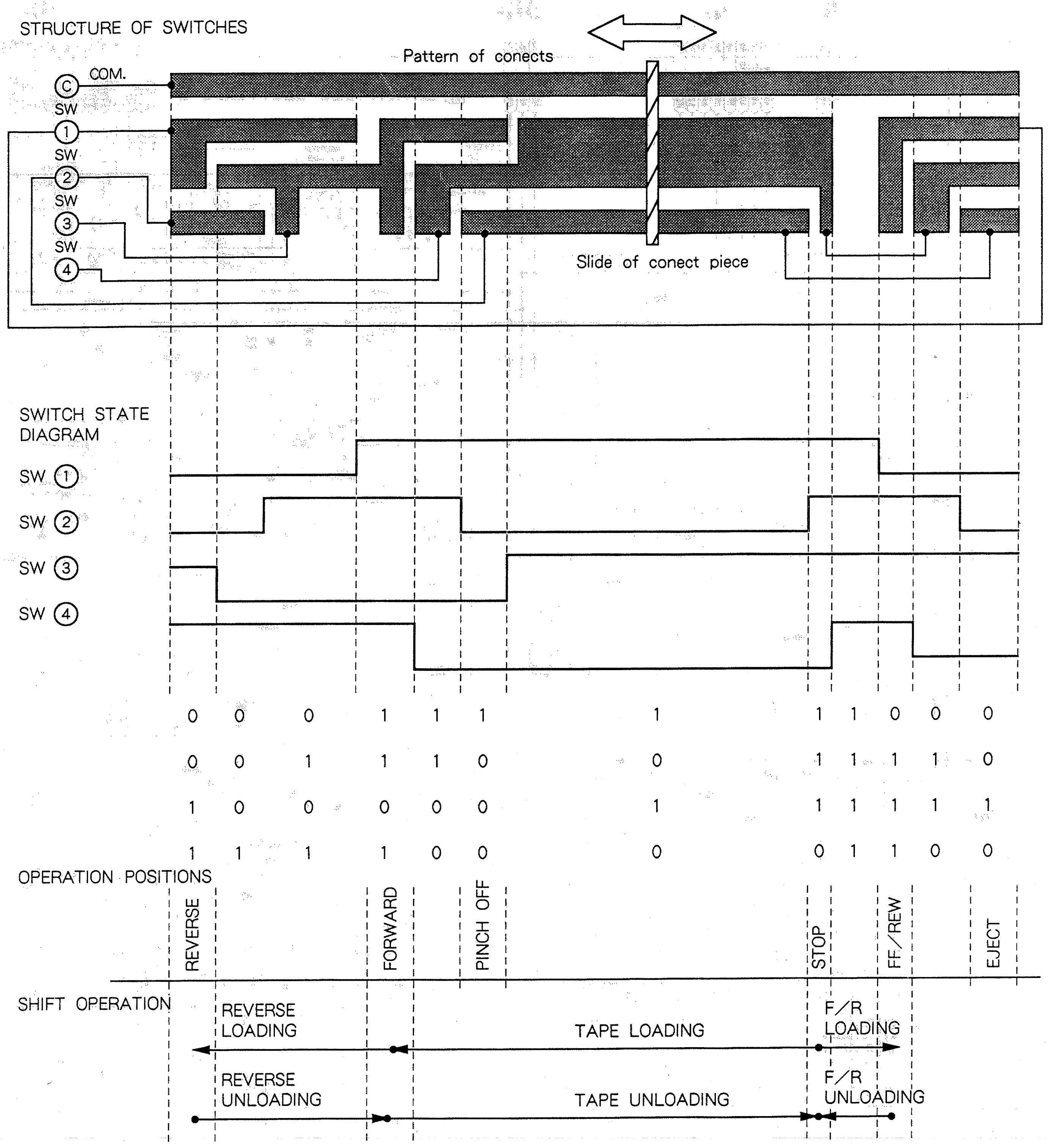
SCHEMATIC DIAGRAM – 1 (VIDEO)


A MAIN(VIDEO SECTION)C.B
TO TUNER SECTION 1C,2C
TO AUDIO SECTION 1B-8B
TO SYSTEM CONTROL /SERVO SECTION 19A-21A
TO SYSTEM CONTROL /SERVO SECTION 1A-18A
RF V
TU V
AUDIO IN
AUDIO OUT
AUDIO GND
SP
REG 9V
GND
SD/DB
REC
REG 12V
REG 5V
GND
C-SYNC
V PB
SCP
VD MASK
MESECAM
NTSC PB
LP
4.43
REC
EE
SD/DE
JOG V0
V-LEV
RF SWP
JOG
LT/TU
SCHDET
SP
(EXCEPT FOR SE2, SE1, AE, K)
J501-1 AUDIO INPUT
J501-2 AUDIO OUTPUT
J501
J501-3 VIDEO INPUT
J501-4 VIDEO OUTPUT
IC501 NJM2233S SWITCH
IC301 LA7391 Y/C PROCESSOR
IC401 LA7311 PAL /MESECAM DET
(EXCEPT FOR F, NZ, K)
IC304 LC8992 PAL 1H CCD
IC302 HD14066BFP SWITCH
IC303 HD74HC123AFP MONO/MOLTI
SUPER CLEAR
TO MLT SECTION 1G-10G
TO P UR C.B HL553
HL551
VIDEO OUT
VIDEO GND
VIDEO IN
PB 12V
AUDIO OUT
AUDIO GND
AUDIO IN
HL501
REG 5V
V-LEV
RF SWP
GND
PB CSL
REC
PB Y
GND
REC Y
GND
REC CSL
GND
PB 5V
TO C HEAD AMP C.B CN601
(FOR SE2, SE1 AE, K)
(EXCEPT FOR F, NZ, K)
(EXCEPT FOR 0150SH, 0K975)
◀ :PB VIDEO SIGNAL
◀ :PB Y SIGNAL
◁ :PB C SIGNAL
◀◀ :REC VIDEO SIGNAL
◀◀ :REC Y SIGNAL
◁◁ :REC C SIGNAL
← :CONTROL SIGNAL
—○ :WAVE FORMS NO.
VOLTAGE
NO MARK :PB MODE
( ) :REC MODE


A MAIN (MLT SECTION) C.B
(FOR G150SH,DK975)
◁ :PB C SIGNAL
○ :WAVE FORMS NO.
TO VIDEO SECTION 1G-5G
TO VIDEO SECTION 6G-10G
DL582 ADL-FN1344W 4.43NTSC
IC551 MM1130XB NTSC/PAL CONVERTER
Q584 2SC2712GR BUFFER
Q585 2SC2712GR BUFFER
Q586 DTA144EK SWITCH
PHASE COMPARISON
45° PHASE SHIFT
V.SYNIC BRL
VCXO
R-Y CONVERSION
ATT -30B
COMP
VCO
1/2
SW1
SW2

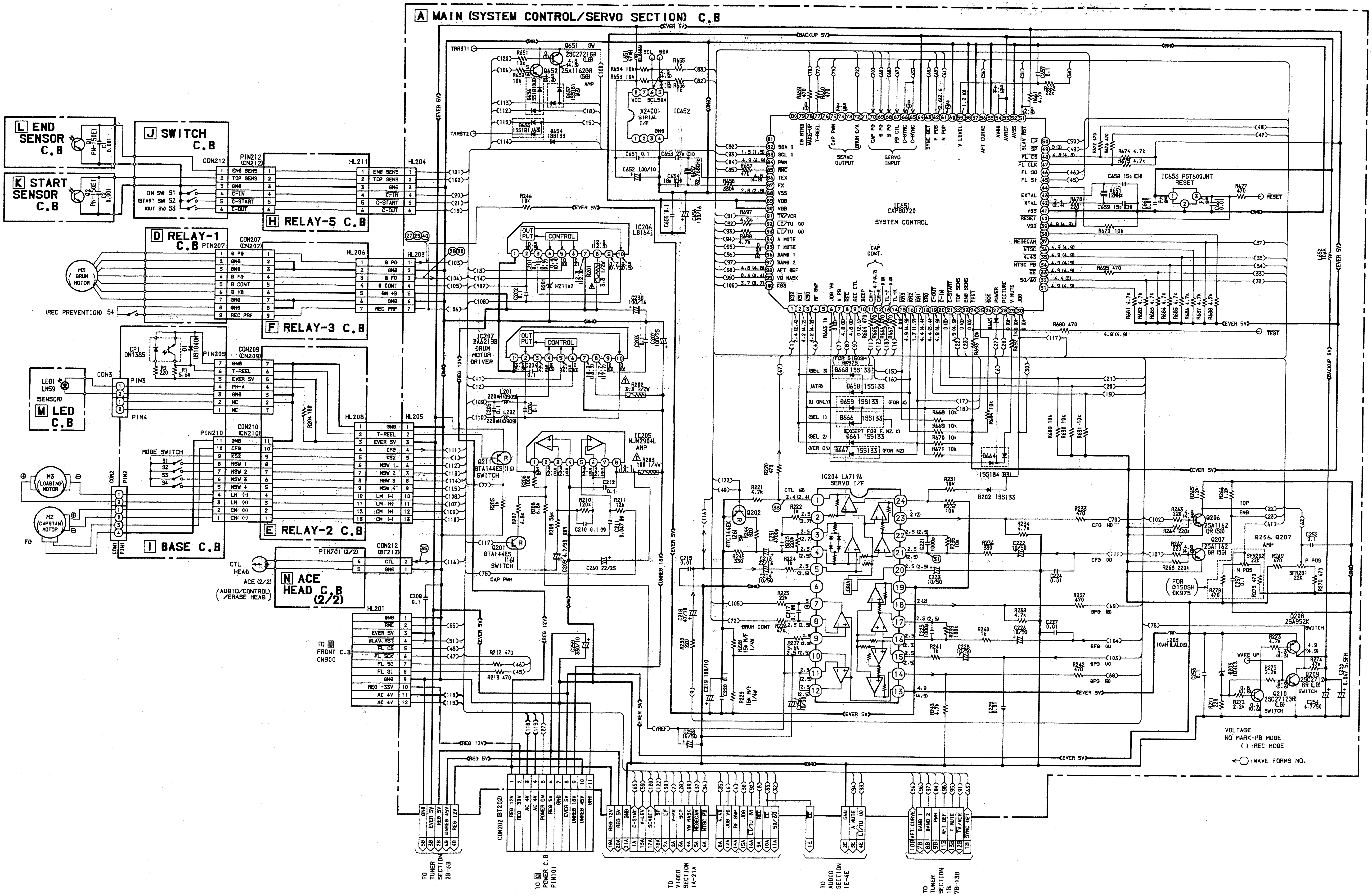
SYSTEM SWITCH MODE

※ When SYSTEM CONTROL IC has run away
SYSTEM CONTROL IC will not accept any mode.

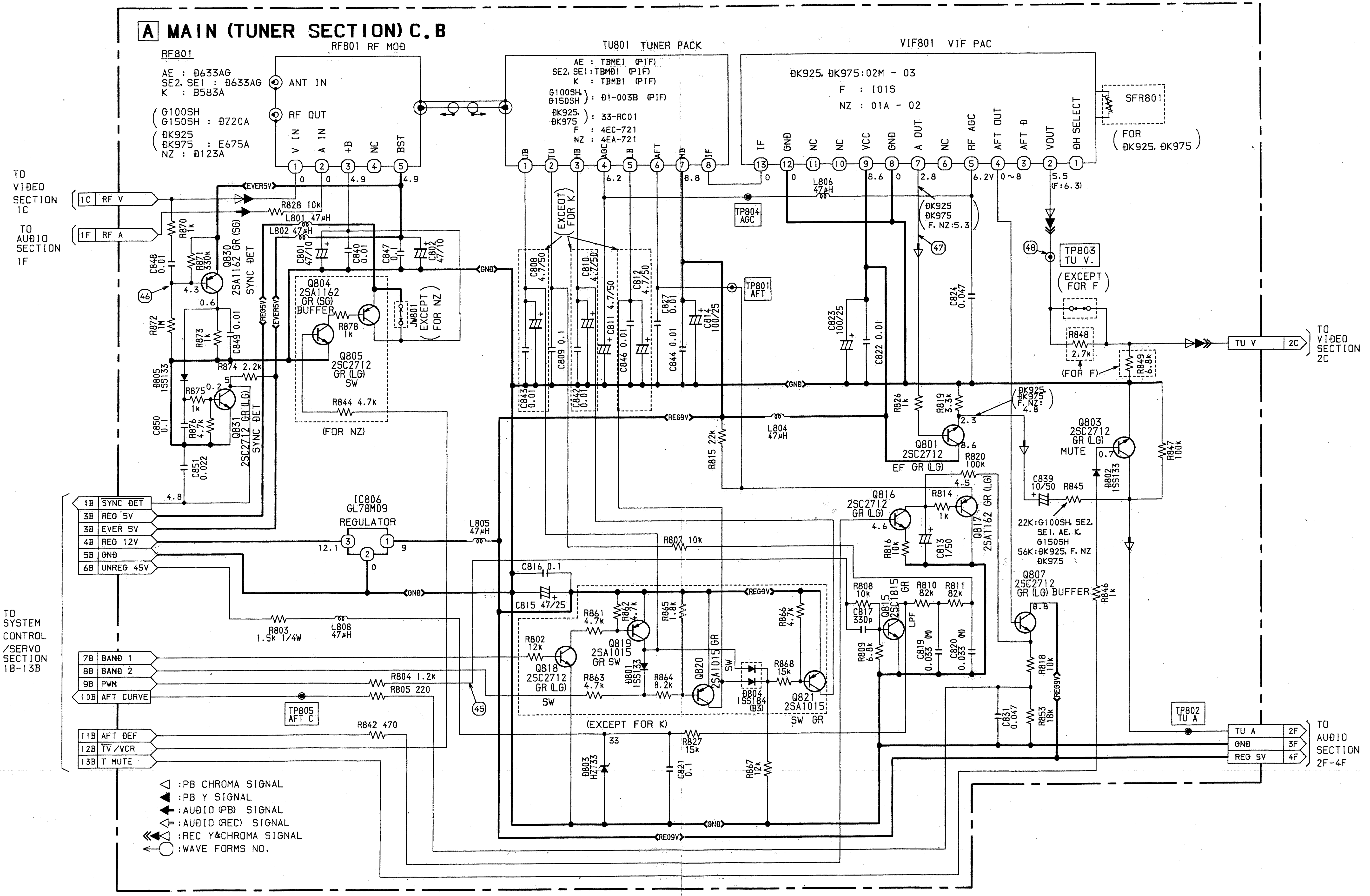

STRUCTURE OF SWITCHES
Pattern of conects
COM.
Ⓒ
SW ①
SW ②
SW ③
SW ④
Slide of conect piece
SWITCH STATE DIAGRAM
SW ①
SW ②
SW ③
SW ④
0 0 0 1 1 1 1 1 1 0 0 0
0 0 1 1 1 0 0 1 1 1 1 0
1 0 0 0 0 0 1 1 1 1 1 1
1 1 1 1 0 0 0 0 1 1 0 0
OPERATION POSITIONS
REVERSE
FORWARD
PINCH OFF
STOP
FF/REW
EJECT
SHIFT OPERATION
REVERSE LOADING
TAPE LOADING
F/R LOADING
REVERSE UNLOADING
TAPE UNLOADING
F/R UNLOADING

SWITCH				Position
SW1	SW2	SW3	SW4	
0	0	1	0	Front loading, Eject
0	1	1	0	Intermediate
0	1	1	1	F.F, REW
1	1	1	1	Intermediate
1	1	1	0	Stop
1	0	1	0	Tape loading
1	0	0	0	Gear change
1	1	0	0	Intermadiate
1	1	0	1	Play (Pause)
0	1	0	1	Intermediate
0	0	0	1	Intermediate
0	0	1	1	Reset

SCHEMATIC DIAGRAM – 3 (SYSCON/SERVO)

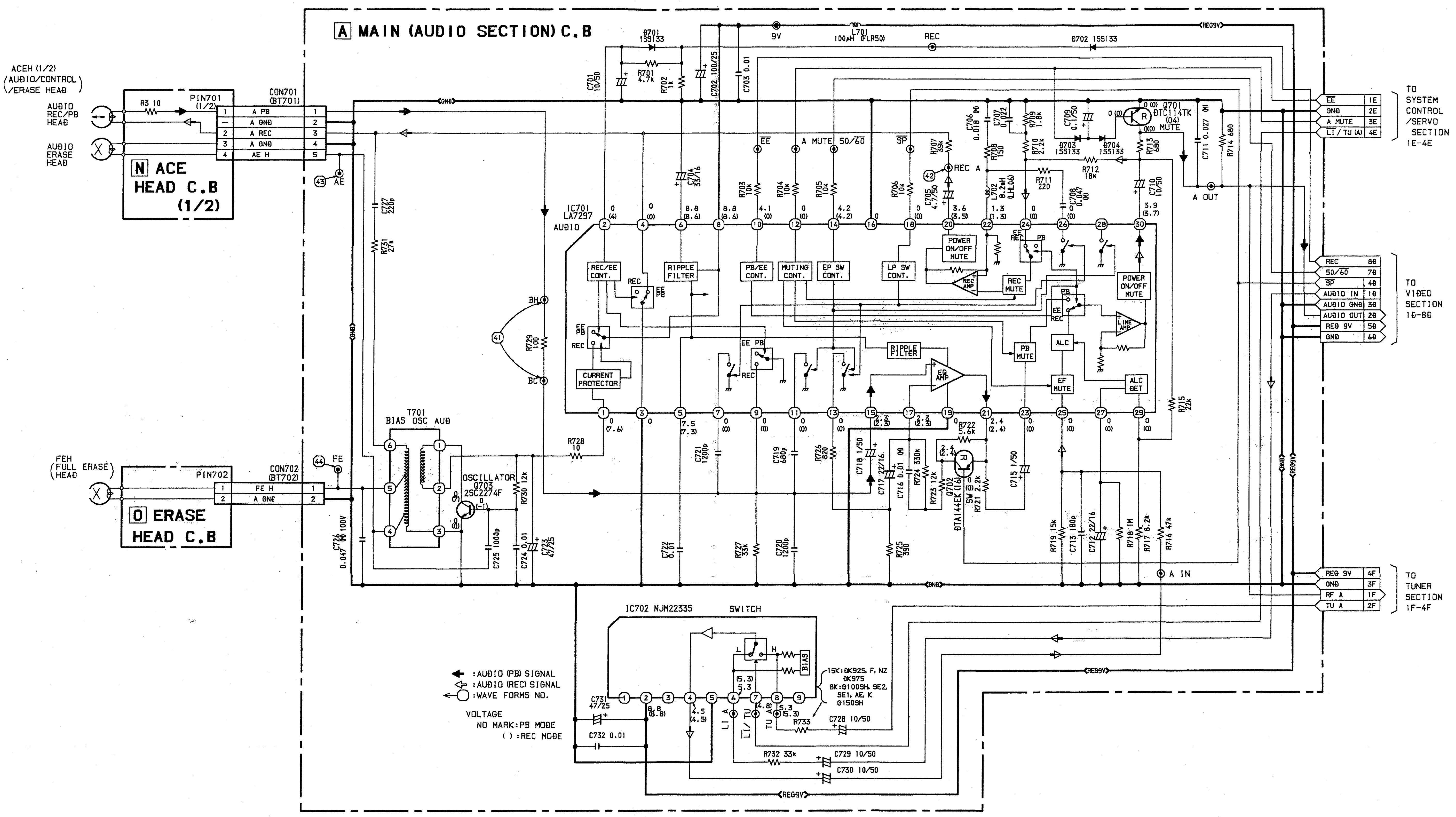

A MAIN (SYSTEM CONTROL/SERVO SECTION) C.B
L END SENSOR C.B
K START SENSOR C.B
J SWITCH C.B
H RELAY-5 C.B
D RELAY-1 C.B
F RELAY-3 C.B
M LED C.B
E RELAY-2 C.B
I BASE C.B
N ACE HEAD C.B (2/2)
IC651 CXP80720 SYSTEM CONTROL
IC652 X24C01 SIRIAL I/F
IC653 PST600JMT RESET
IC206 LB1641
IC207 BA6219B DRUM MOTOR DRIVER
IC205 NJM2904L AMP
IC204 LA7116 SERVO I/F
Q651 2SC2721GR (LG) SW
Q652 2SA1162GR (SG) AMP
Q211 DTA144ES (16) SWITCH
Q201 DTA144ES (16) SWITCH
Q202 DTC144EK
Q206 2SA1162 GR (SG)
Q207 2SA1162 GR (SG)
Q206, Q207 AMP
Q208 2SA952K SWITCH
Q209 2SC2712 GR (LG) SWITCH
Q210 2SC2712GR (LG) SWITCH
M3 DRUM MOTOR
M3 LOADING MOTOR
M2 CAPSTAN MOTOR
CTL HEAD
ACE (2/2) (AUDIO/CONTROL/ERASE HEAD)
MODE SWITCH
(REC PREVENTION) S4
EVER 5V
BACKUP 5V
REG 12V
REG 5V
UNREG 18V
TO B FRONT C.B CN900
TO TUNER SECTION 2B-6B
TO G POWER C.B PIN101
TO VIDEO SECTION 1A-21A
TO AUDIO SECTION 1E-4E
TO TUNER SECTION 1B, 7B-13B
VOLTAGE
NO MARK: PB MODE
( ): REC MODE
:WAVE FORMS NO.
RESET
TEST

SCHEMATIC DIAGRAM – 4 (TUNER)

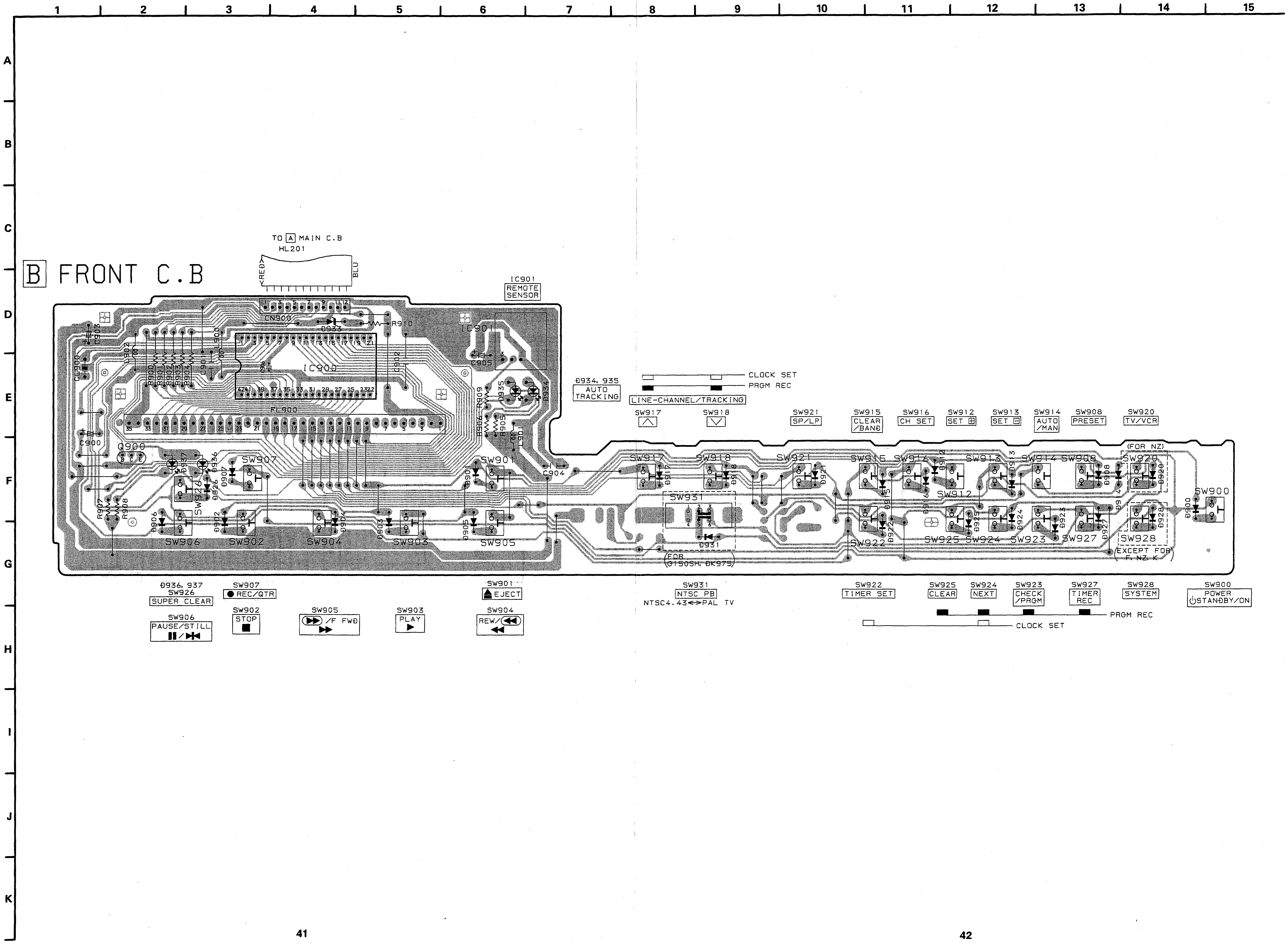

A MAIN (TUNER SECTION) C.B
RF801
AE : D633AG
SE2, SE1 : D633AG
K : B583A
(G100SH G150SH : D720A)
(DK925 DK975 : E675A)
NZ : D123A
RF801 RF MOD
ANT IN
RF OUT
V IN
A IN
+B
NC
BST
TU801 TUNER PACK
AE : TBME1 (PIF)
SE2, SE1 : TBMD1 (PIF)
K : TBMB1 (PIF)
G100SH, G150SH : D1-003B (PIF)
DK925, DK975 : 33-RC01
F : 4EC-721
NZ : 4EA-721
UB
TU
HB
AGC
LB
AFT
MB
IF
VIF801 VIF PAC
DK925, DK975:02M - 03
F : 101S
NZ : 01A - 02
IF
GND
NC
NC
VCC
GND
A OUT
NC
RF AGC
AFT OUT
AFT D
VOUT
DH SELECT
SFR801
(FOR DK925, DK975)
TO VIDEO SECTION 1C
TO AUDIO SECTION 1F
1C RF V
1F RF A
Q830 2SA1162 GR (SG) SYNC DET
Q804 2SA1162 GR (SG) BUFFER
Q805 2SC2712 GR (LG) SW
JW801 (EXCEPT FOR NZ)
(FOR NZ)
Q831 2SC2712 GR (LG) SYNC DET
(EXCEPT FOR K)
TP804 AGC
TP801 AFT
TP803 TU V.
(EXCEPT FOR F)
(FOR F)
TU V 2C
TO VIDEO SECTION 2C
Q801 2SC2712 EF GR (LG)
Q803 2SC2712 GR (LG) MUTE
Q816 2SC2712 GR (LG)
Q817 2SA1162 GR (LG)
22K:G100SH, SE2, SE1, AE, K, G150SH
56K:DK925, F, NZ DK975
Q807 2SC2712 GR (LG) BUFFER
Q815 2SC1815 GR
LPF
IC806 GL78M09 REGULATOR
1B SYNC DET
3B REG 5V
3B EVER 5V
4B REG 12V
5B GND
6B UNREG 45V
TO SYSTEM CONTROL /SERVO SECTION 1B-13B
7B BAND 1
8B BAND 2
9B PWM
10B AFT CURVE
11B AFT DEF
12B TV/VCR
13B T MUTE
TP805 AFT C
Q818 2SC2712 GR (LG) SW
Q819 2SA1015 GR SW
Q820 2SA1015 GR SW
Q821 2SA1015 SW GR
D804 1SS184 (B3)
D803 HZT33
(EXCEPT FOR K)
TP802 TU A
TU A 2F
GND 3F
REG 9V 4F
TO AUDIO SECTION 2F-4F
◁ :PB CHROMA SIGNAL
◀ :PB Y SIGNAL
◀ :AUDIO (PB) SIGNAL
◁ :AUDIO (REC) SIGNAL
◀◀◁ :REC Y&CHROMA SIGNAL
◯ :WAVE FORMS NO.

			Q819			Q820			Q821		
BAND	BAND1	BAND2	B	E	C	B	E	C	B	E	C
VL	0	0	8.8	8.8	0	8.0	8.8	8.6	8.6	8.8	0
VH	0	4.8	8.8	8.8	0	8.3	8.8	0	8.0	8.8	8.5
UHF	4.8	0	8.0	8.8	8.6	8.6	8.8	0	8.6	8.8	0

SCHEMATIC DIAGRAM – 5 (AUDIO)


A MAIN (AUDIO SECTION) C.B
ACEH (1/2) (AUDIO/CONTROL /ERASE HEAD)
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
N ACE HEAD C.B (1/2)
PIN701 (1/2)
CON701 (BT701)
A PB
A GND
A REC
A GND
AE H
FEH (FULL ERASE) HEAD
O ERASE HEAD C.B
PIN702
CON702 (BT702)
FE H
A GND
IC701 LA7297 AUDIO
REC/EE CONT.
RIPPLE FILTER
PB/EE CONT.
MUTING CONT.
EP SW CONT.
LP SW CONT.
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
PB MUTE
ALC
EF MUTE
ALC DET
EQ AMP
CURRENT PROTECTOR
T701 BIAS OSC AUD
OSCILLATOR Q703 2SC2274F
Q701 DTC114TK MUTE
Q702 DTA144EK (16) SW
D701 1SS133
D702 1SS133
D703 1SS133
D704 1SS133
L701 100µH (FLR50)
L702 8.2mH (LHL06)
9V
REC
EE
A MUTE
50/60
SP
REC A
A OUT
A IN
BH
BC
AE
FE
IC702 NJM2233S SWITCH
L1 A
L1/TU
TU A
BIAS
15K:DK925, F, NZ DK975
8K:G100SH, SE2, SE1, AE, K G150SH
TO SYSTEM CONTROL /SERVO SECTION 1E-4E
EE 1E
GND 2E
A MUTE 3E
L1/TU (A) 4E
TO VIDEO SECTION 1D-8D
REC 8D
50/60 7D
SP 4D
AUDIO IN 1D
AUDIO GND 3D
AUDIO OUT 2D
REG 9V 5D
GND 6D
TO TUNER SECTION 1F-4F
REG 9V 4F
GND 3F
RF A 1F
TU A 2F
◀ :AUDIO (PB) SIGNAL
◁ :AUDIO (REC) SIGNAL
◁○ :WAVE FORMS NO.
VOLTAGE
NO MARK:PB MODE
( ) :REC MODE

WIRING – 2 (FRONT)



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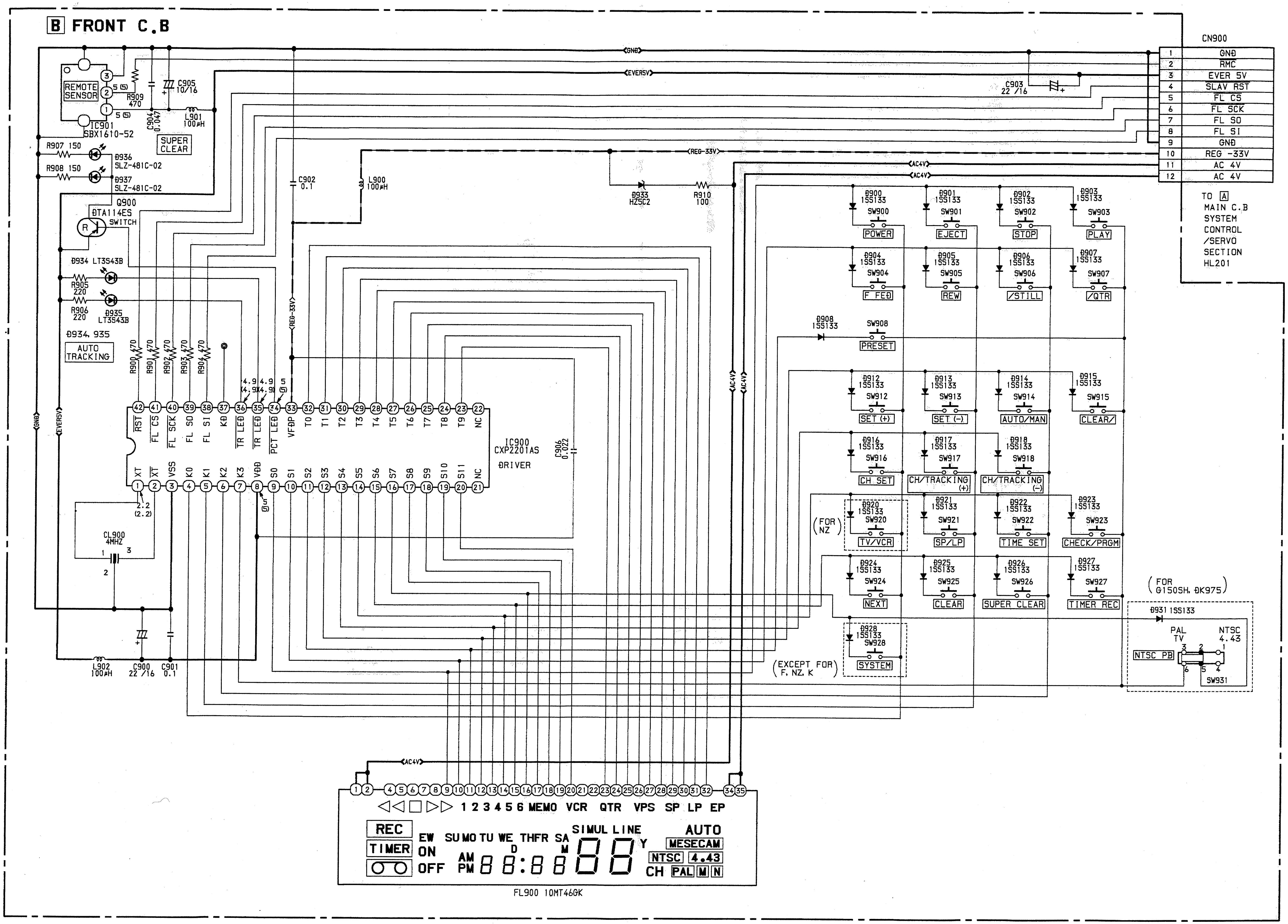
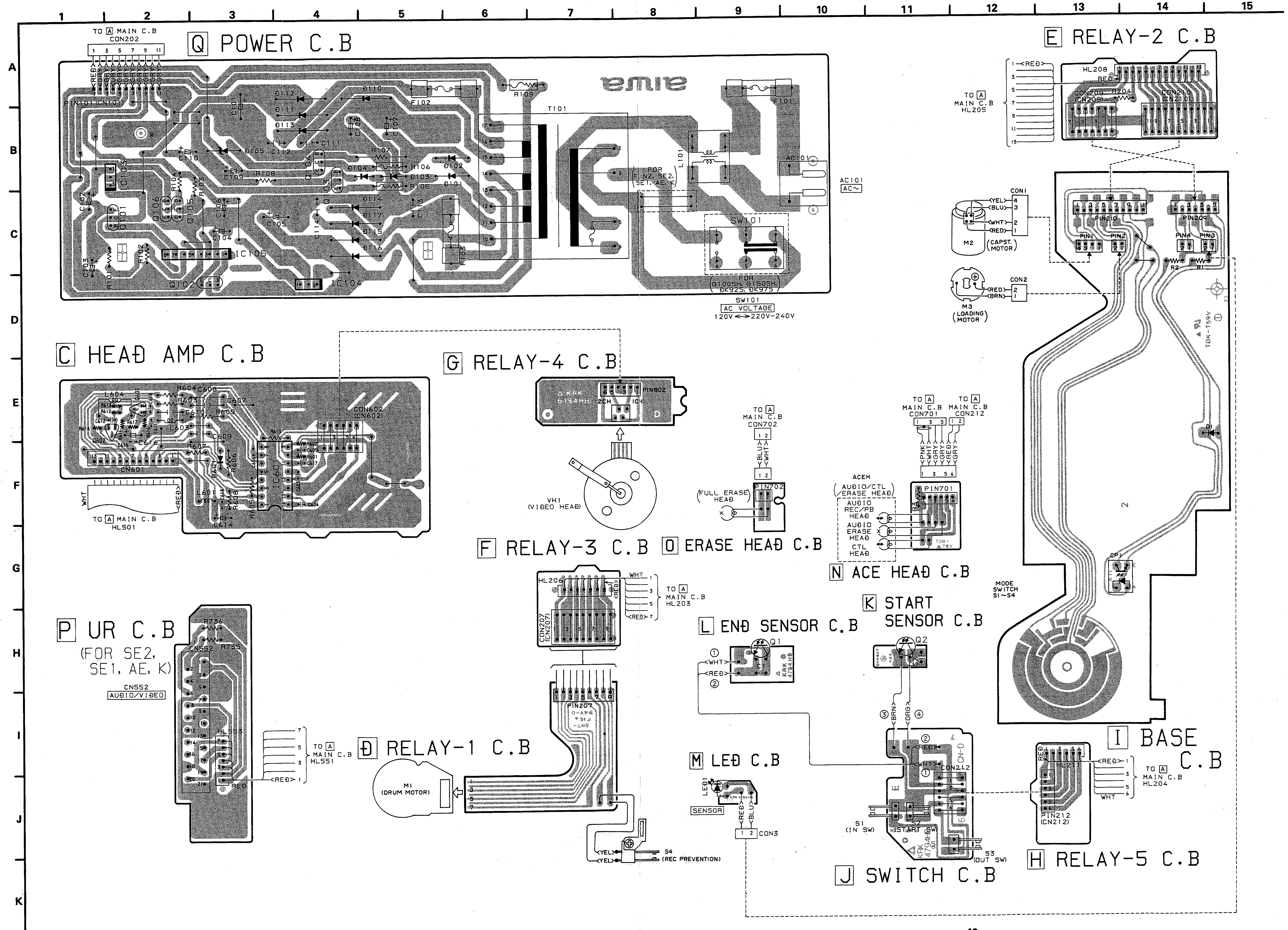
14
15
A
B
C
D
E
F
G
H
I
J
K
B FRONT C.B
TO A MAIN C.B
HL201
RED
BLU
CN900
IC901
REMOTE SENSOR
IC900
FL900
D933
R910
C905
D934
D935
R909
R906
R905
L901
C904
C903
C906
L902
C902
C901
R900
R901
R902
R903
R904
C900
L900
Q900
B C E
D937
D936
D926
D907
SW926
SW907
R907
R908
D906
SW906
D902
SW902
D904
SW904
D903
SW903
D905
SW905
D901
SW901
D934, 935
AUTO TRACKING
CLOCK SET
PRGM REC
LINE-CHANNEL/TRACKING
SW917
SW918
SW921
SP/LP
SW915
CLEAR /BAND
SW916
CH SET
SW912
SET ⊞
SW913
SET ⊟
SW914
AUTO /MAN
SW908
PRESET
SW920
TV/VCR
(FOR NZ)
D917
D918
D921
D915
D916
D912
D913
D908
D920
D914
SW900
D900
SW931
D931
(FOR G150SH, DK975)
SW922
D922
D925
D924
D923
D927
D928
SW925
SW924
SW923
SW927
SW928
(EXCEPT FOR F, NZ, K)
D936, 937
SW926
SUPER CLEAR
SW907
● REC/QTR
SW906
PAUSE/STILL
II/▶◀
SW902
STOP
■
SW905
(▶▶)/F FWD
▶▶
SW903
PLAY
▶
SW901
▲ EJECT
SW904
REW/(◀◀)
◀◀
SW931
NTSC PB
NTSC4.43<->PAL TV
SW922
TIMER SET
SW925
CLEAR
SW924
NEXT
SW923
CHECK /PRGM
SW927
TIMER REC
SW928
SYSTEM
SW900
POWER
⏻STANDBY/ON
PRGM REC
CLOCK SET

SCHEMATIC DIAGRAM – 6 (FRONT)

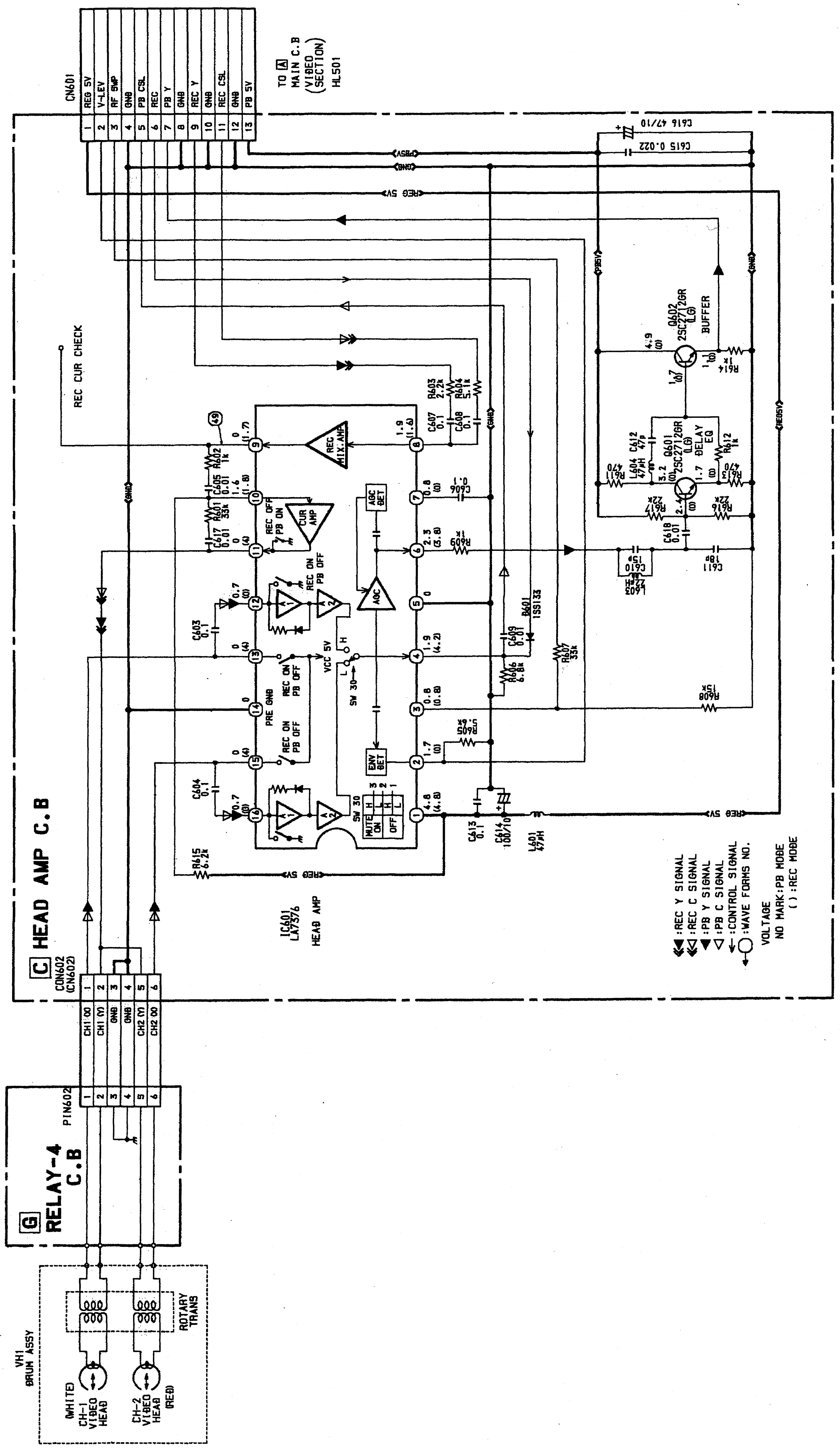


B FRONT C.B
REMOTE SENSOR
IC901 SBX1610-52
R909 470
C905 10/16
C904 0.047
L901 100μH
SUPER CLEAR
R907 150
R908 150
D936 SLZ-481C-02
D937 SLZ-481C-02
Q900 DTA114ES SWITCH
D934 LT3S43B
R905 220
R906 220
D935 LT3S43B
D934, 935 AUTO TRACKING
R900 470
R901 470
R902 470
R903 470
R904 470
C902 0.1
L900 100μH
D933 HZ5C2
R910 100
C903 22/16
(GND)
(EVER5V)
(REG-33V)
(AC4V)
CN900
1 GND
2 RMC
3 EVER 5V
4 SLAV RST
5 FL CS
6 FL SCK
7 FL SO
8 FL SI
9 GND
10 REG -33V
11 AC 4V
12 AC 4V
TO A MAIN C.B SYSTEM CONTROL /SERVO SECTION HL201
IC900 CXP2201AS DRIVER
RST FL CS FL SCK FL SO FL SI KD TR LED TR LED PCT LED VFDP T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 NC
XT XT VSS K0 K1 K2 K3 VDD S0 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 NC
C906 0.022
CL900 4MHZ
2.2 (2.2)
L902 100μH
C900 22/16
C901 0.1
D900 1SS133 SW900 POWER
D901 1SS133 SW901 EJECT
D902 1SS133 SW902 STOP
D903 1SS133 SW903 PLAY
D904 1SS133 SW904 F FED
D905 1SS133 SW905 REW
D906 1SS133 SW906 /STILL
D907 1SS133 SW907 /QTR
D908 1SS133 SW908 PRESET
D912 1SS133 SW912 SET (+)
D913 1SS133 SW913 SET (–)
D914 1SS133 SW914 AUTO/MAN
D915 1SS133 SW915 CLEAR/
D916 1SS133 SW916 CH SET
D917 1SS133 SW917 CH/TRACKING (+)
D918 1SS133 SW918 CH/TRACKING (–)
(FOR NZ) D920 1SS133 SW920 TV/VCR
D921 1SS133 SW921 SP/LP
D922 1SS133 SW922 TIME SET
D923 1SS133 SW923 CHECK/PRGM
D924 1SS133 SW924 NEXT
D925 1SS133 SW925 CLEAR
D926 1SS133 SW926 SUPER CLEAR
D927 1SS133 SW927 TIMER REC
(EXCEPT FOR F, NZ, K) D928 1SS133 SW928 SYSTEM
(FOR G150SH, DK975)
D931 1SS133
PAL TV
NTSC 4.43
NTSC PB
SW931
◁◁ □ ▷▷ 1 2 3 4 5 6 MEMO VCR QTR VPS SP LP EP
REC TIMER EW SU MO TU WE TH FR SA SIMUL LINE AUTO MESECAM
ON OFF AM PM D M Y NTSC 4.43 CH PAL M N
FL900 10MT46GK

WIRING – 3 (HEAD AMP/POWER/UR/MECHA)

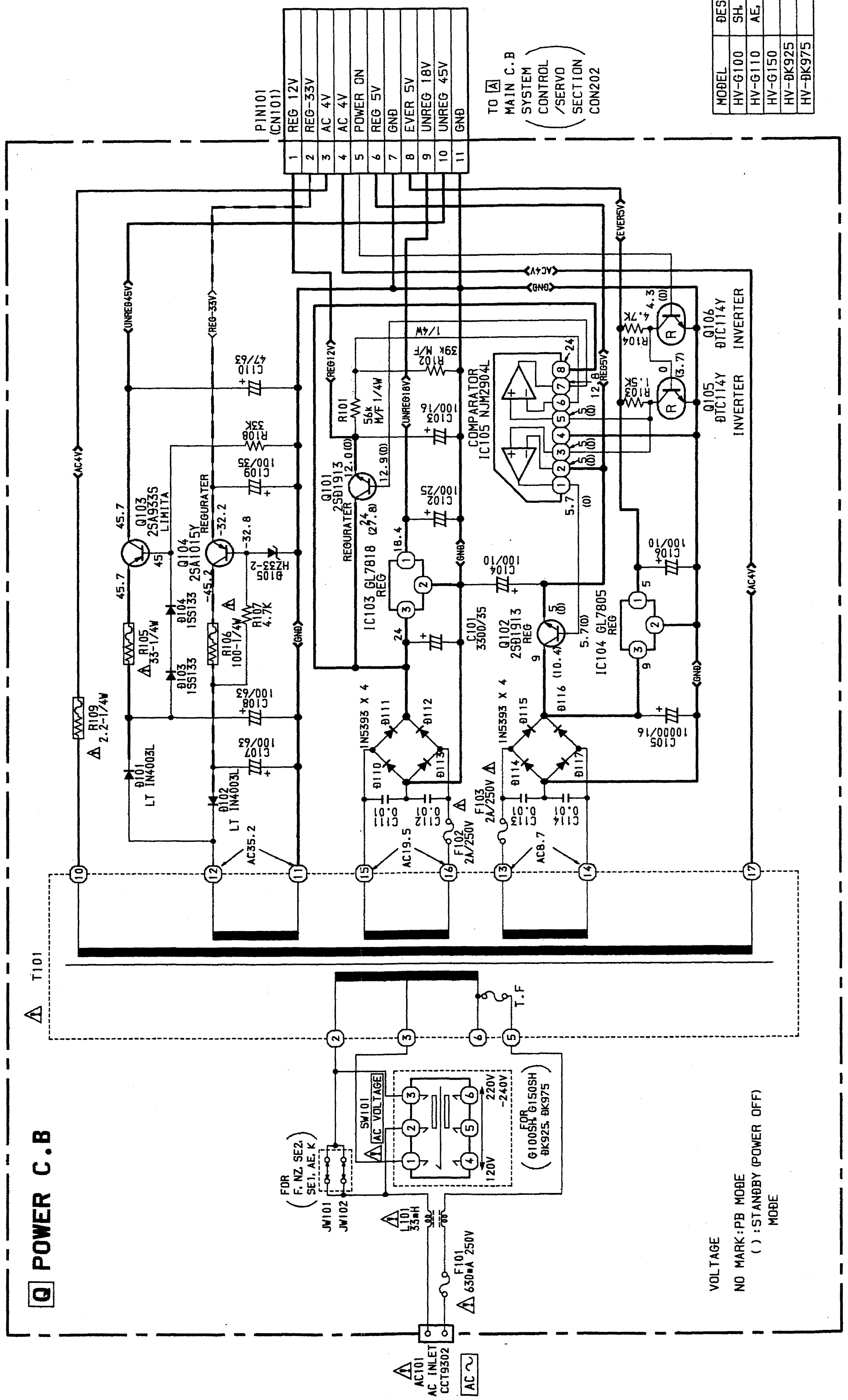

Q POWER C.B
TO A MAIN C.B CON202
T101
SW101 AC VOLTAGE 120V ⟷ 220V–240V
FOR (G100SH, G150SH, DK925, DK975)
FOR (F, NZ, SE2, SE1, AE, K)
AC101 AC~
C HEAD AMP C.B
CN601
CON602 (CN602)
TO A MAIN C.B HL501
G RELAY-4 C.B
PIN602
VH1 (VIDEO HEAD)
F RELAY-3 C.B
TO A MAIN C.B HL203
CON207 (CN207)
PIN207
D RELAY-1 C.B
M1 (DRUM MOTOR)
S4 (REC PREVENTION)
P UR C.B (FOR SE2, SE1, AE, K)
CN552 AUDIO/VIDEO
TO A MAIN C.B HL551
O ERASE HEAD C.B
TO A MAIN C.B CON702
PIN702
FULL ERASE HEAD
N ACE HEAD C.B
ACEH (AUDIO/CTL /ERASE HEAD)
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
CTL HEAD
TO A MAIN C.B CON701
TO A MAIN C.B CON212
PIN701
L END SENSOR C.B
K START SENSOR C.B
M LED C.B
SENSOR
CON3
J SWITCH C.B
S1 (IN SW)
S2 (START SW)
S3 (OUT SW)
CON212
E RELAY-2 C.B
TO A MAIN C.B HL205
HL208
CON209 (CN209)
CON210 (CN210)
M2 (CAPST. MOTOR)
CON1
M3 (LOADING MOTOR)
CON2
I BASE C.B
PIN210
PIN209
MODE SWITCH S1~S4
H RELAY-5 C.B
HL211
PIN212 (CN212)
TO A MAIN C.B HL204

SCHEMATIC DIAGRAM – 7 (HEAD AMP)

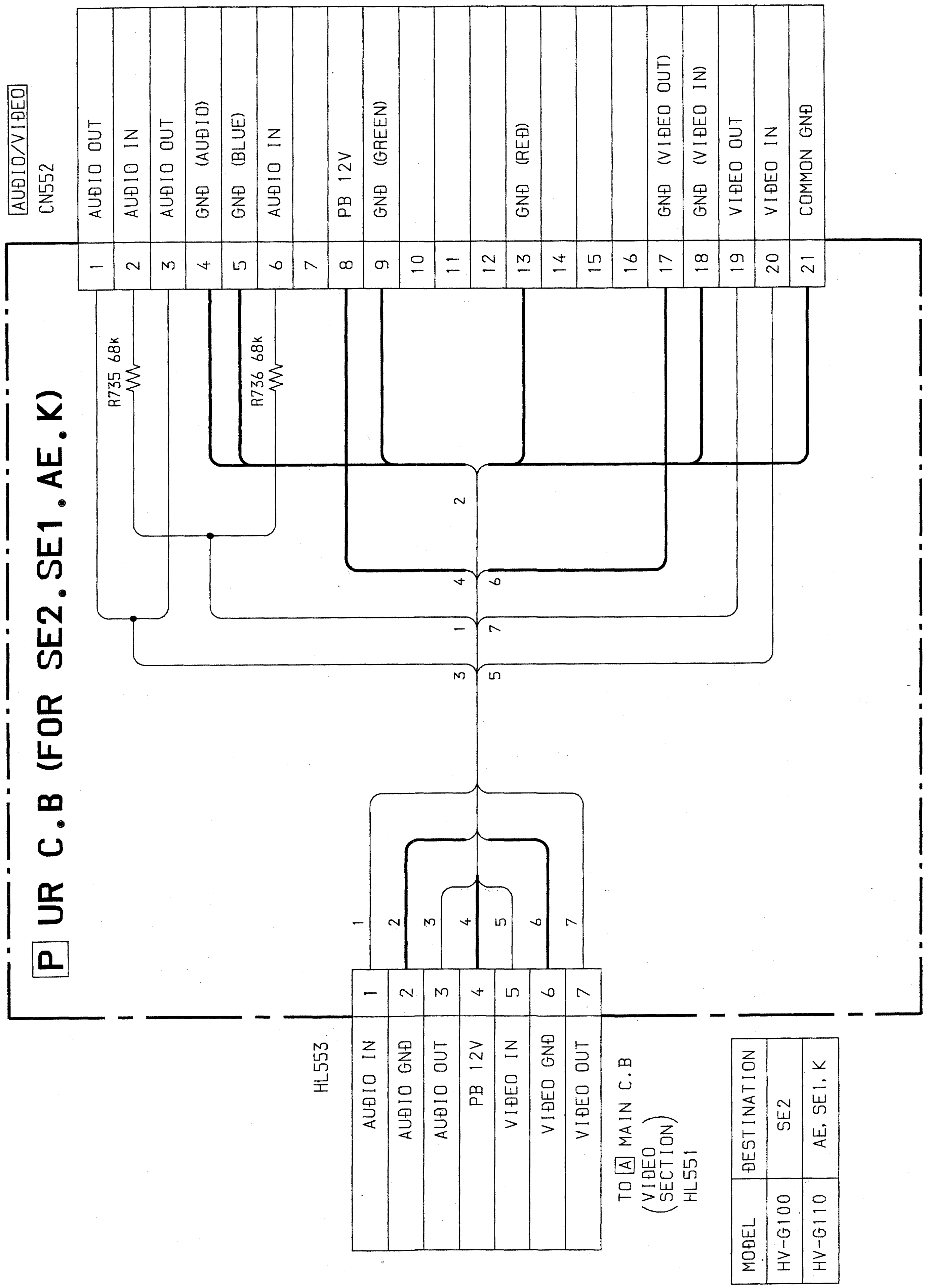

C HEAD AMP C.B
G RELAY-4 C.B
CN601
TO A MAIN C.B (VIDEO SECTION) HL501
REG 5V
V-LEV
RF SWP
GND
PB C5L
REC
PB Y
GND
REC Y
GND
REC C5L
GND
PB 5V
CN602 (CN602)
PIN602
CH1 (Y)
CH2 (Y)
IC601 LA7376 HEAD AMP
Q601 2SC2712GR DELAY EQ
Q602 2SC2712GR BUFFER
REC CUR CHECK
REC MIX.AMP
CUR AMP
AGC
AGC DET
ENV DET
SW 30
VCC 5V
ROTARY TRANS
VH1 DRUM ASSY
(WHITE) CH-1 VIDEO HEAD
CH-2 VIDEO HEAD (RED)
:REC Y SIGNAL
:REC C SIGNAL
:PB Y SIGNAL
:PB C SIGNAL
:CONTROL SIGNAL
:WAVE FORMS NO.
VOLTAGE
NO MARK:PB MODE
( ):REC MODE

SCHEMATIC DIAGRAM – 8 (POWER)

MODEL	DESTINATION
HV-G100	SH, SE2, F, NZ
HV-G110	AE, SE1, K
HV-G150	SH
HV-DK925	KE
HV-DK975	KE


Q POWER C.B
PIN101 (CN101)
REG 12V
REG-33V
AC 4V
AC 4V
POWER ON
REG 5V
GND
EVER 5V
UNREG 18V
UNREG 45V
GND
TO A MAIN C.B SYSTEM CONTROL /SERVO SECTION CON202
Q103 2SA935S LIMITA
Q104 2SA1015Y REGURATER
Q101 2SD1913 REGURATER
Q102 2SD1913 REG
IC103 GL7818 REG
IC104 GL7805 REG
IC105 NJM2904L COMPARATOR
Q105 DTC114Y INVERTER
Q106 DTC114Y INVERTER
1N5393 x 4
D101 LT 1N4003L
D102 LT 1N4003L
F102 2A/250V
F103 2A/250V
T101
T.F
SW101 AC VOLTAGE
220V -240V
120V
FOR G100SH,G150SH, DK925,DK975
FOR F,NZ,SE2, SE1,AE,K
JW101
JW102
L101 33mH
F101 630mA 250V
AC101 AC INLET CCT9302
AC~
VOLTAGE
NO MARK:PB MODE
( ):STANDBY (POWER OFF) MODE

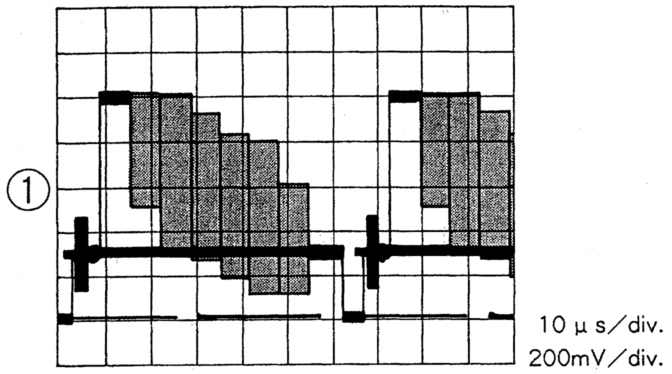
SCHEMATIC DIAGRAM – 9 (UR)


AUDIO/VIDEO
CN552
1 AUDIO OUT
2 AUDIO IN
3 AUDIO OUT
4 GND (AUDIO)
5 GND (BLUE)
6 AUDIO IN
7
8 PB 12V
9 GND (GREEN)
10
11
12
13 GND (RED)
14
15
16
17 GND (VIDEO OUT)
18 GND (VIDEO IN)
19 VIDEO OUT
20 VIDEO IN
21 COMMON GND
R735 68k
R736 68k
P UR C.B (FOR SE2.SE1.AE.K)
HL553
1 AUDIO IN
2 AUDIO GND
3 AUDIO OUT
4 PB 12V
5 VIDEO IN
6 VIDEO GND
7 VIDEO OUT
TO A MAIN C.B (VIDEO SECTION) HL551

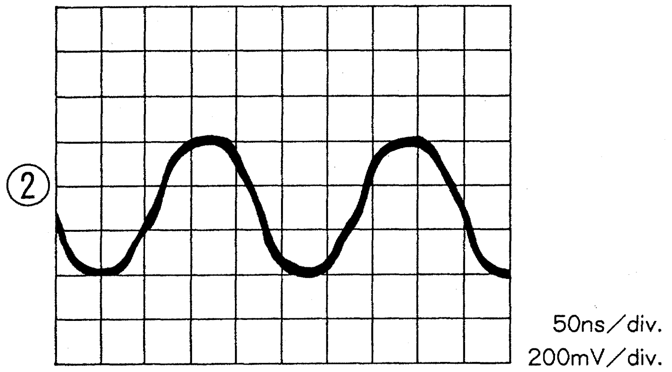
MODEL	DESTINATION
HV-G100	SE2
HV-G110	AE, SE1, K

WAVE FORM – 1 (VIDEO)

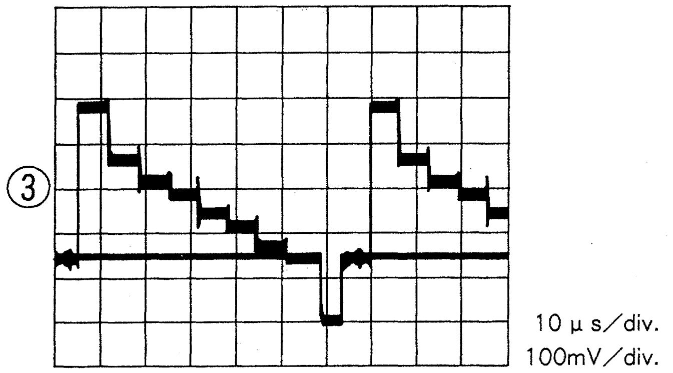
REC (EE SYSTEM)
☆LINE IN (J501 or HL551 Pin⑤) PAL COLOR BAR
① J501 LINE OUT (SH, KER, F)
HL551 Pin⑦ (EXCEPT FOR SH, KE, F)



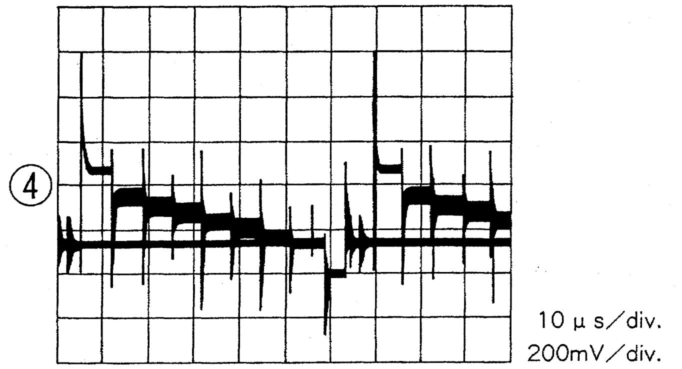
② IC301 Pin ⑲



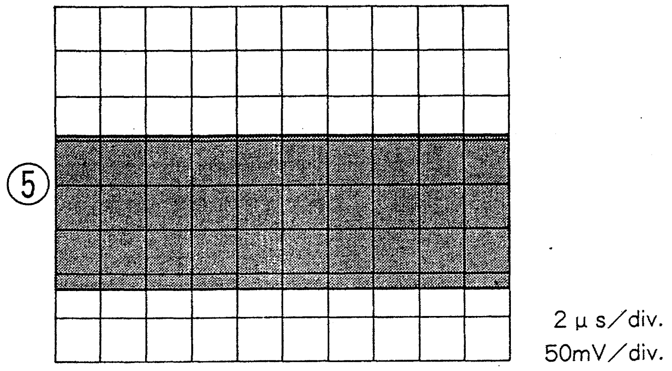
③ IC301 Pin④



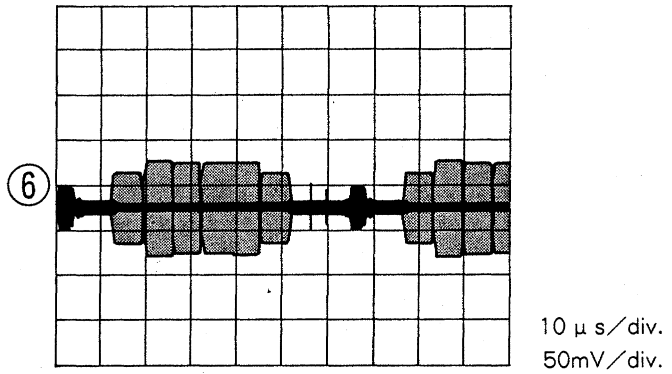
④ IC301 Pin⑤



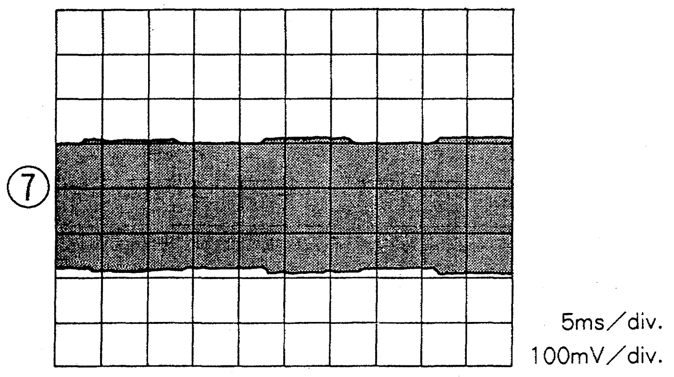
⑤ Q314 EMITTER SIDE



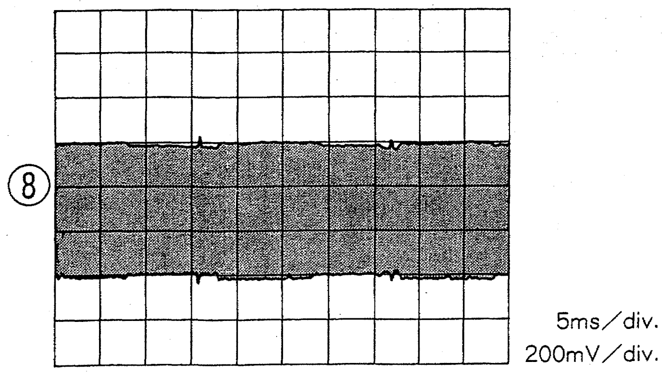
⑥ Q401 EMITTER SIDE



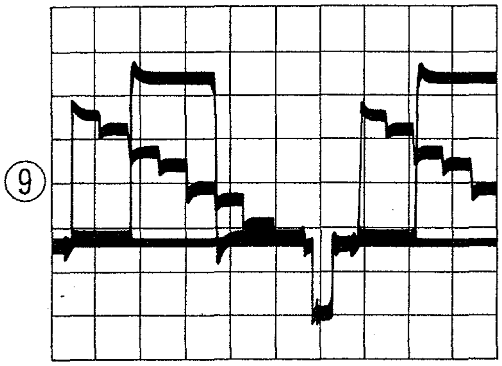
PB (PB SYSTEM)
PB (TEST TAPE : TTV-P1)
⑦ HL501 Pin⑦



⑧ IC301 Pin㊴

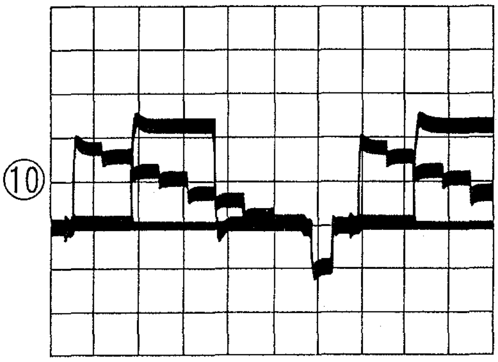


⑨ IC301 Pin ④



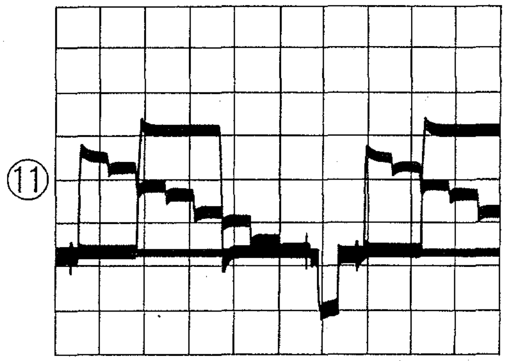
10 μ s/div.
100mV/div.

⑩ IC304 Pin ⑥



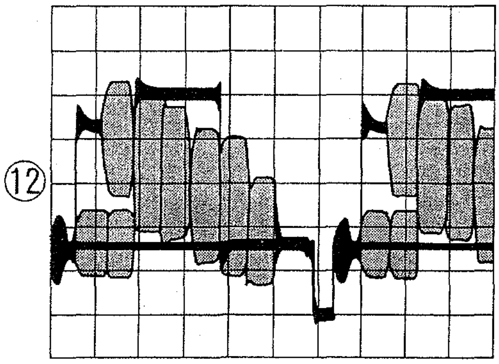
10 μ s/div.
100mV/div.

⑪ IC301 Pin ⑩



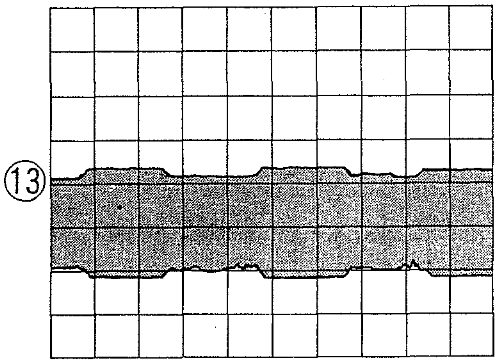
10 μ s/div.
100mV/div.

⑫ J501 LINE OUT (SH, KER, F)
HL551 Pin ⑦ (EXCEPT FOR SH, KER, F)



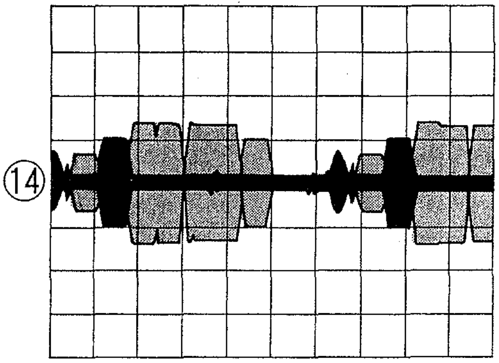
10 μ s/div.
200mV/div.

C SYSTEM
⑬ HL501 Pin ⑤



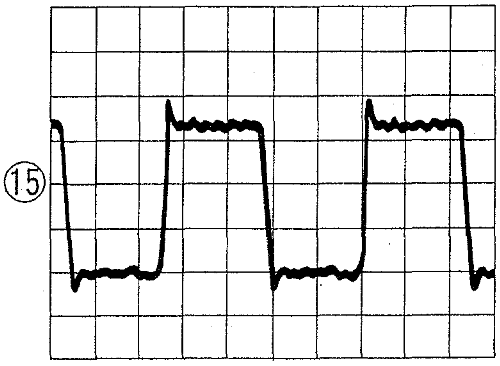
5ms/div.
100mV/div.

⑭ IC301 Pin ⑮



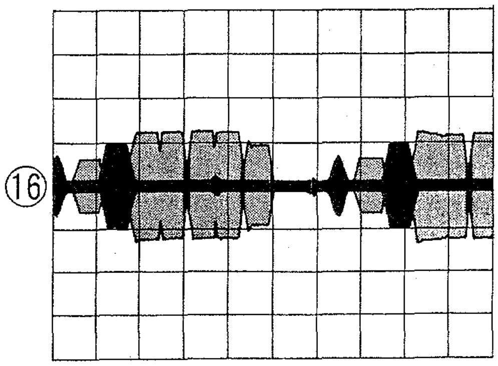
10 μ s/div.
50mV/div.

⑮ IC301 Pin ⑲



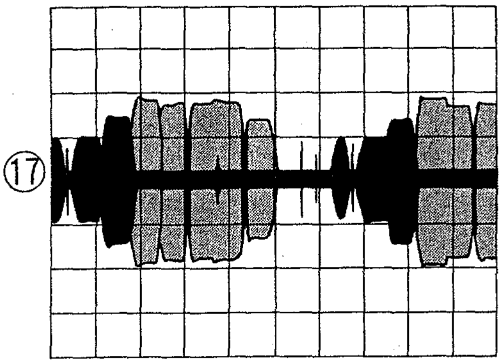
50ns/div.
200mV/div.

⑯ IC301 Pin ㉕



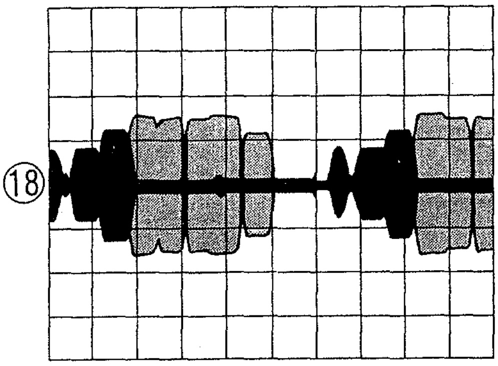
10 μ s/div.
500mV/div.

⑰ IC301 Pin ㉗



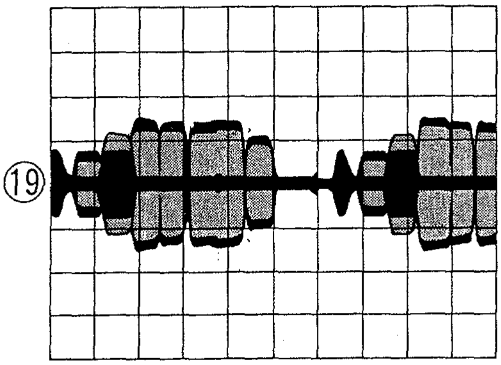
10 µ s/div.
50mV/div.

⑱ IC301 Pin ㉛



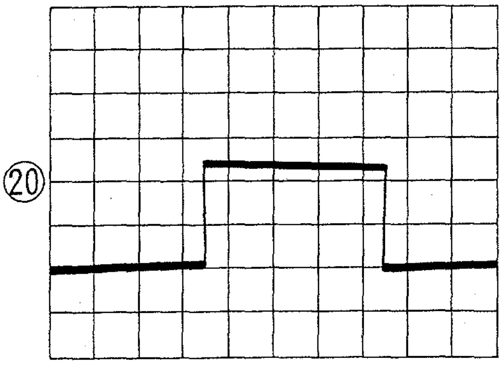
10 µ s/div.
200mV/div.

⑲ IC301 Pin ㉙

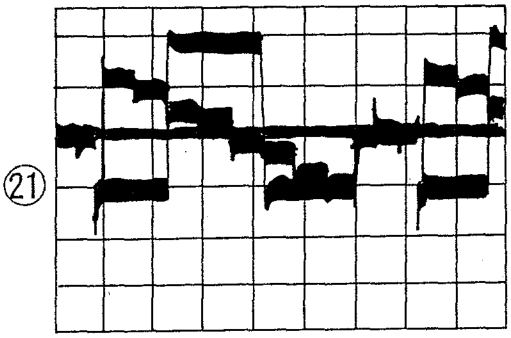


10 µ s/div.
200mV/div.

⑳ IC301 Pin ㊶

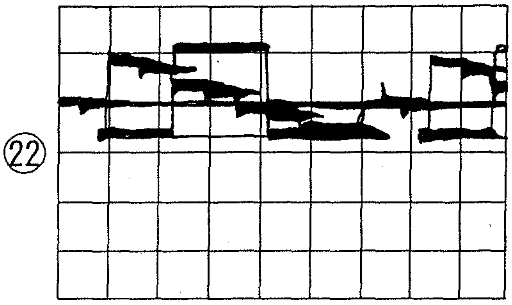


SUPER CLEAR PICTURE (ALL OF TYPES)
< PB OPERATION ONLY >
㉑ IC302 Pin ⑩



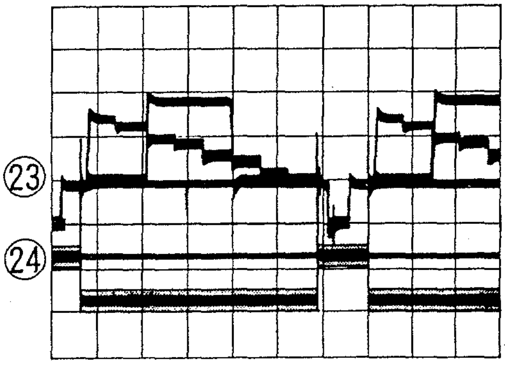
10 µ s/div.
200mV/div.

㉒ Q313 COLLECTOR SIDE



10 µ s/div.
500mV/div.

㉓ IC302 Pin ②
㉔ IC303 Pin ④

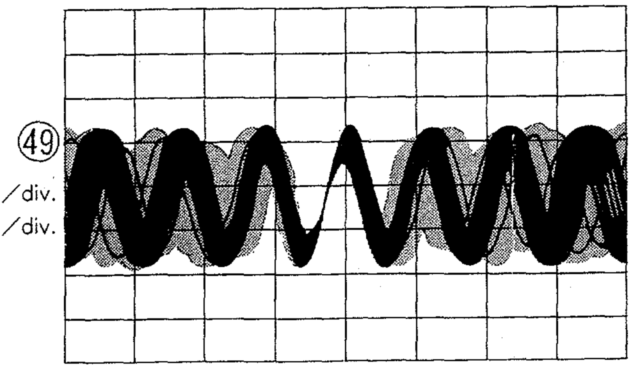


10 µ s/div.
200mV/div.

10 µ s/div.
5V/div.

5ms/div.
500mV/div.

㊾ HEAD AMP C. B
IC601 Pin ⑨

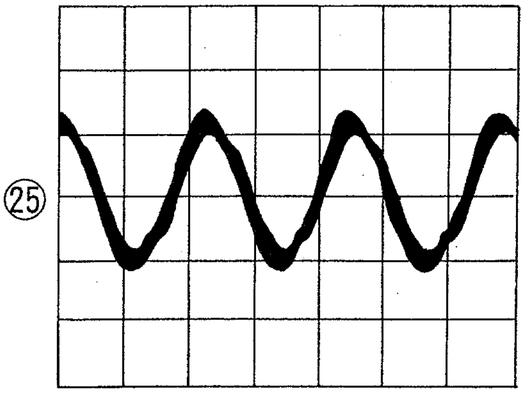


200ns/div.
200mV/div.

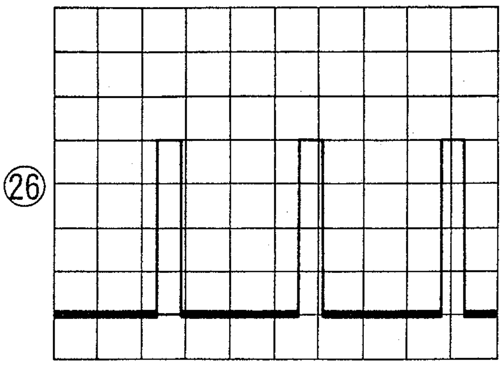
WAVE FORM – 2 (NTSC PB) (G150, DK975)

㉕ NTSC PB ON PAL TV (HV-G150 & HV-DK975)
(Play a TTV-N1 tape and set the switch on the front panel to "PAL TV".)
IC551 Pin ① : Same waveform as that at ⑱ IC301 pin ㉛.
IC551 Pin ⑧ : Same waveform and level as those at ⑲ IC301 pin ㉙.

㉕ IC551 Pin ⑮

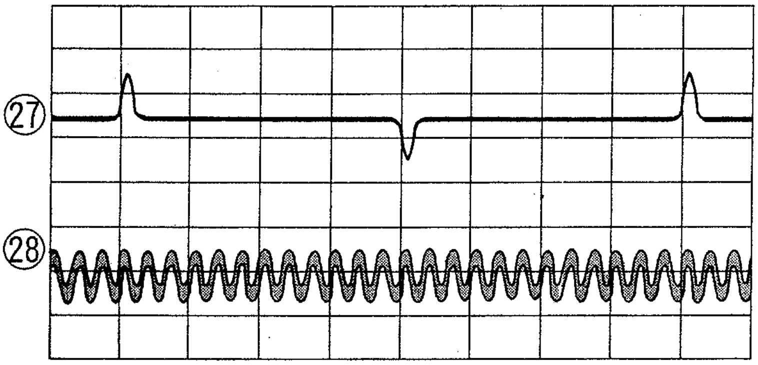


㉖ IC551 Pin ③

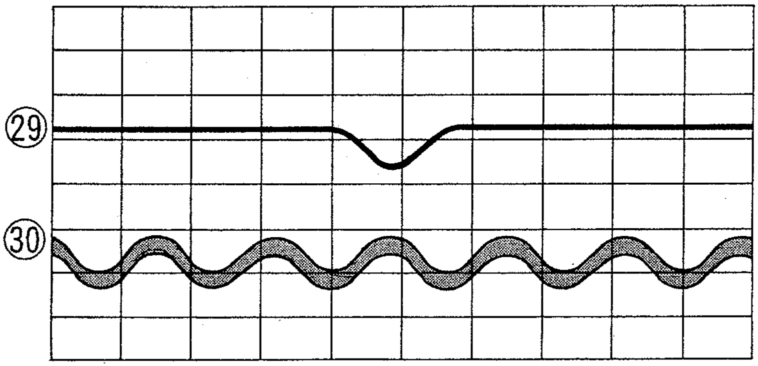


WAVE FORM – 3 (SERVO)

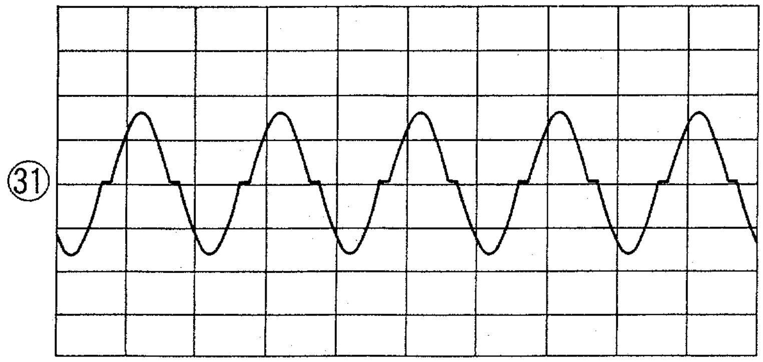
DRUM PG AND FG
㉗ PG (HL203 Pin ①)
㉘ FG (HL203 Pin ③)



DRUM PG AND FG
㉙ PG (HL203 Pin ①)
㉚ FG (HL203 Pin ③)



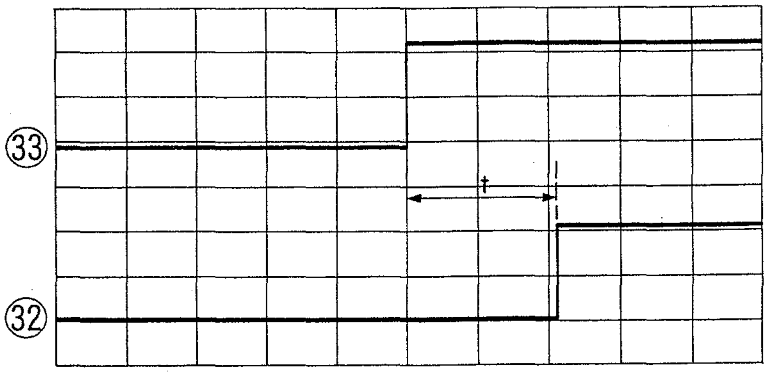
CAPSTAN FG
㉛ IC204 Pin ㉑



PB CTL CHECK

PB (TEST TAPE : TTV-P1)
㉜ HL501 Pin ③ (RF SWP)

㉝ IC204 Pin ① (PB CTL)



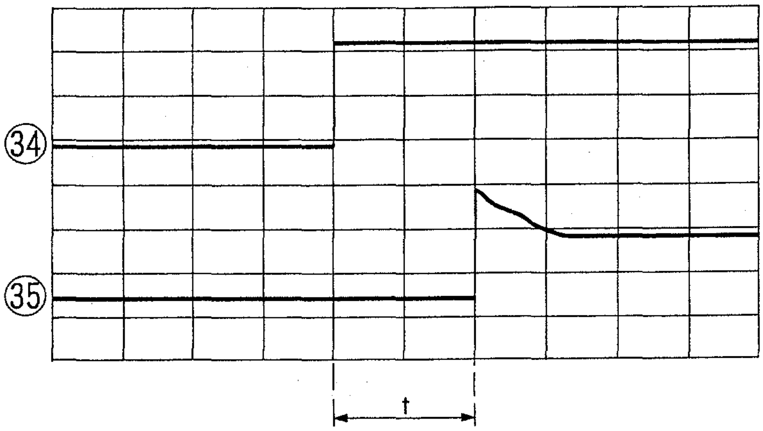
DELAY TIME
1ms/div.
2V/div.
t = 2.0 ± 0.5msec

2ms/div.
2V/div.

REC CTL CHECK

(LINE INPUT : PAL COLOR BAR)
㉞ HL501 Pin ③ (RF SWP)

㉟ BT212 Pin ② (REC CTL)



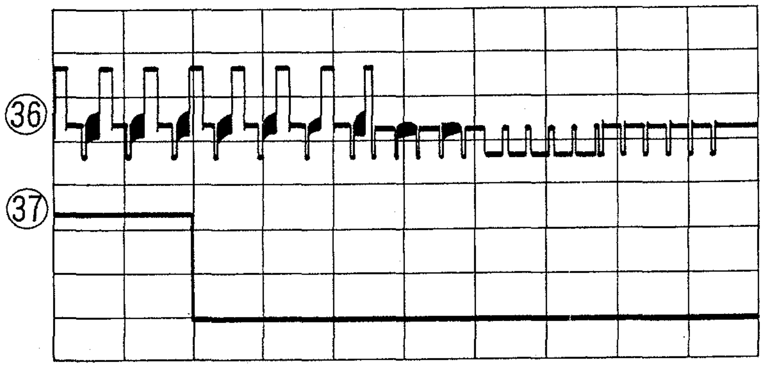
DELAY TIME
200 μ s/div.
2V/div.

2ms/div.
2V/div.
t = 416 ± 32 μ SEC

RF SW PULSE AND VIDEO OUT

㊱ J501 (V OUT)

㊲ HL501 Pin ③ (RF SWP)



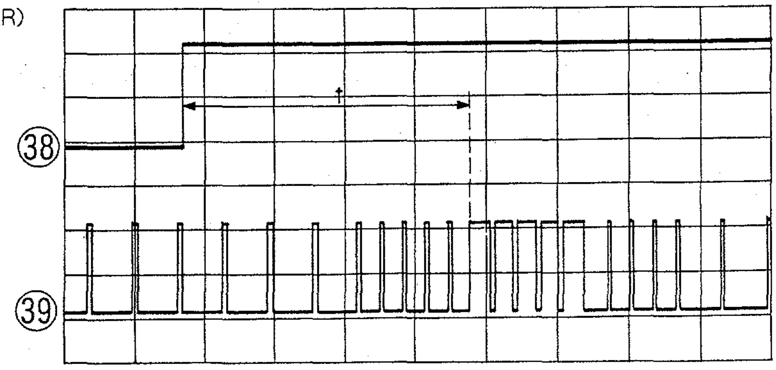
DELAY TIME
100 μ s/div.
500mV/div.

2ms/div.
2V/div.

REC (LINE INPUT : PAL COLOR BAR)

㊳ HL501 Pin ③ (RF SWP)

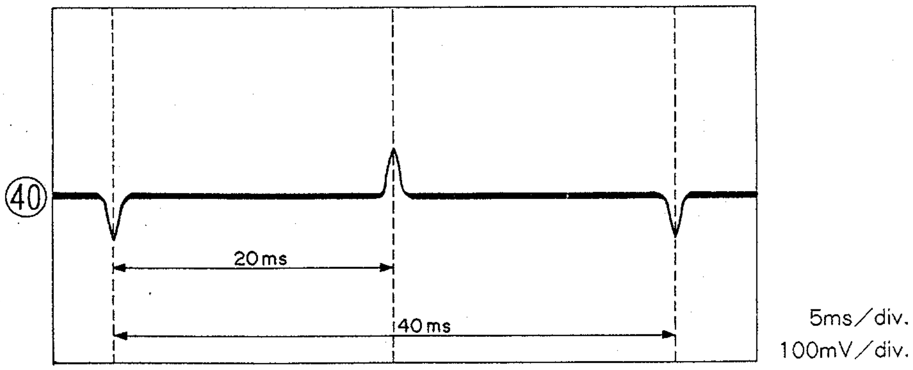
㊴ IC301 Pin ㉜ (C-SYNC)



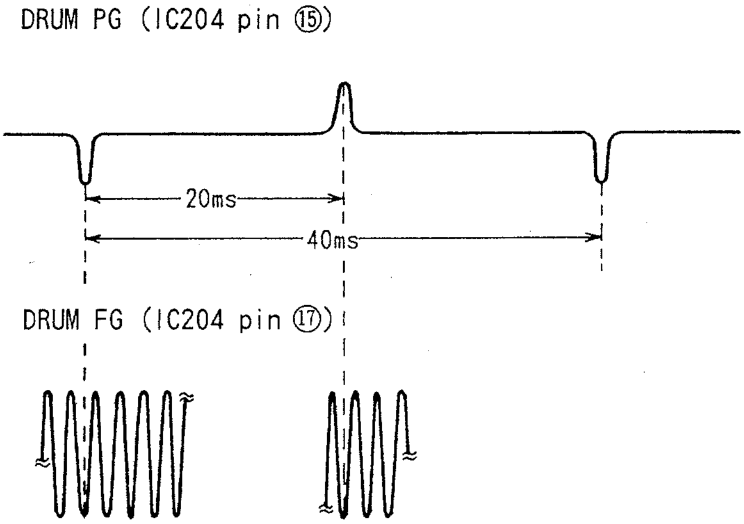
DELAY TIME
100 μ s/div.
2V/div.
t = 416 ± 32 μ sec

2ms/div.
2V/div.

PB (TEST TAPE : TTV-P1)
DRUM PG
㊵ PG (HL203 Pin ①)



DRUM SERVO SYSTEM TIMING CHART

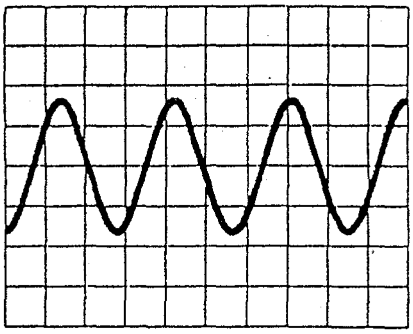


DRUM PG (IC204 pin ⑮)
20ms
40ms
DRUM FG (IC204 pin ⑰)

WAVE FORM – 4 (AUDIO)

㊶ R727 BOTH TERMINAL SIDE
BETWEEN (BC) ~ (BH)
INPUT : NON SIGNAL
REC MODE

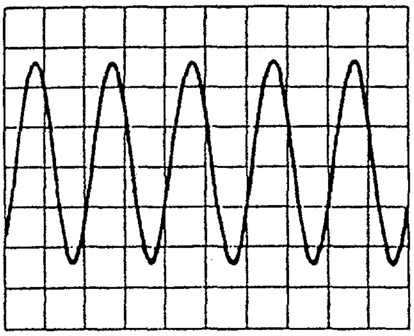
㊶



5 µ s/div.
20mV/div.

㊷ C705⊖ TERMINAL
(REC A)
INPUT : –8dBs
EE MODE

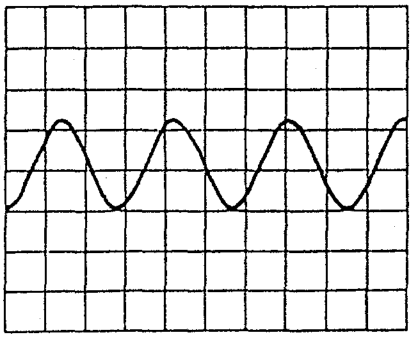
㊷



0.5ms/div.
0.5V/div.

㊸ T701 Pin ④
(AE)
REC MODE

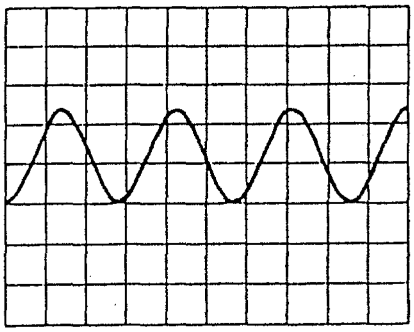
㊸



5 µ s/div.
20V/div.

㊹ T701 Pin ⑤
(FE)
REC MODE

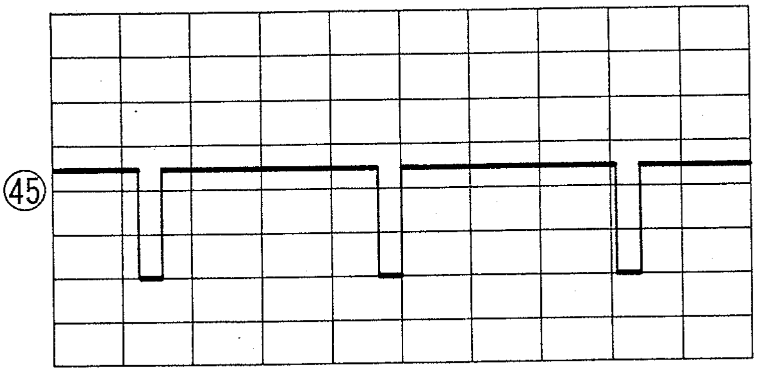
㊹



5 µ s/div.
20V/div.

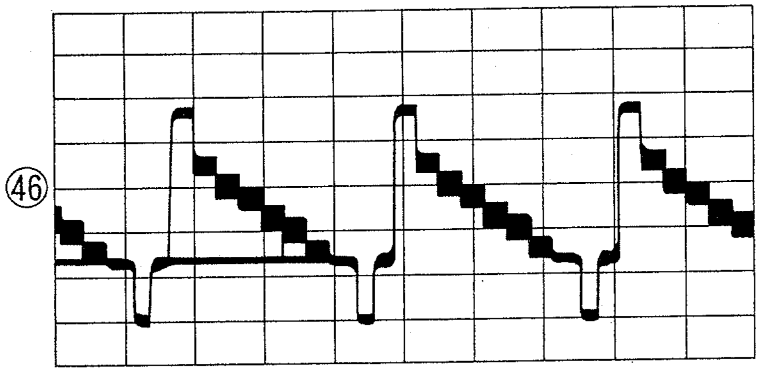
WAVE FORM－5 (TUNER)

㊺ R804 (PWM)



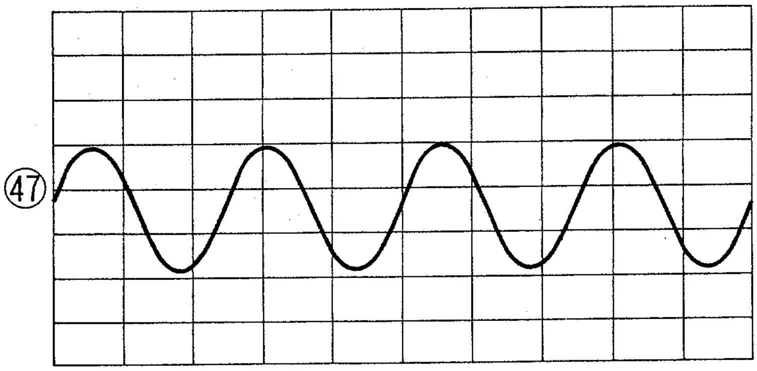
50 μ s/div.
2V/div.

㊻ Q830 BASE



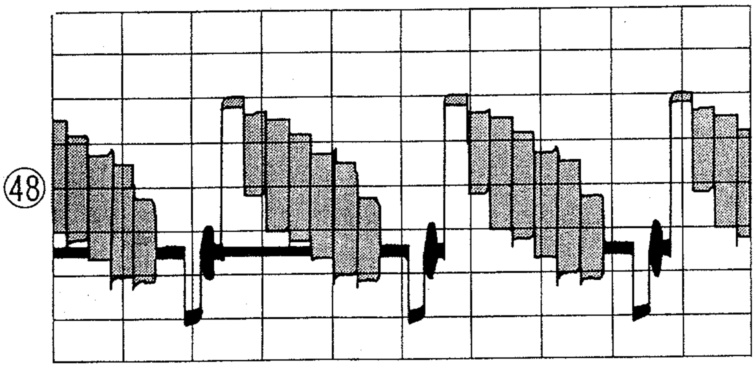
20 μ s/div.
200mV/div.

㊼ VIF801 Pin ⑦ (A OUT)



1ms/div.
500mV/div.

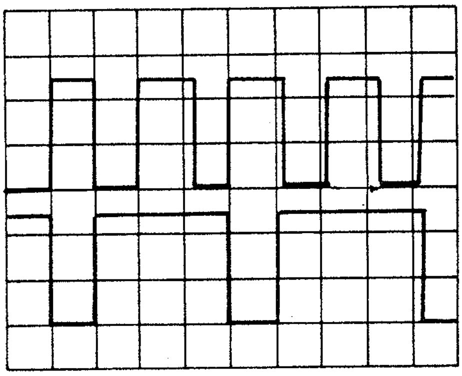
㊽ TP803 (V OUT)



20 μ s/div.
200mV/div.

MAIN CPU OPERATION

- The Main CPU (IC651 : CXP80720-＊＊＊Q) always performs the following during operation which can be checked at IC651 terminal.
  ① Key matrix sensing ($\overline{\text{KS2}}$／$\overline{\text{KS3}}$)
  ② Serial communications with the FL display drive IC ($\overline{\text{FLCS}}$／$\overline{\text{FLSCK}}$／FLSO／FLSI)
- Since the memory is backed up (for a nominal of 60 minutes) in G100, DK975 and DK925 series models, the Main CPU is active even after the AC cord is unplugged. (However, no signal is output because the sleep mode is entered, not normal operation). Therefore, the unit may not operate normally if the AC cord is plugged in after the unit has been serviced (for example, when parts are replaced or a harness is unplugged and reinserted). If signals in ① and ② above are not output, reset the Main CPU to start it. Use tweezers, etc. to short the RST pin on the Main CB to ground to reset it.



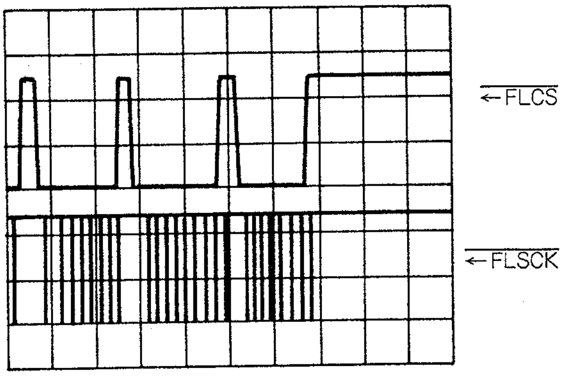
Connection Pin ①

Connection Pin (100)

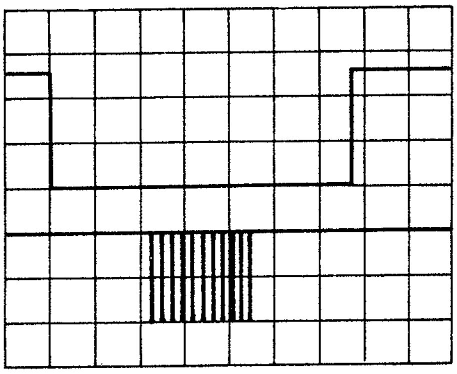
2ms／div.
2V／div.

Connection Pin ㊽ of IC651 ($\overline{\text{FL CS}}$)
Communications are repeated cyclically.
A total of 24 words are used in one communications session, divided into 4 units of 1＋8＋8＋7.

Connection Pin ㊼ of IC651 ($\overline{\text{FL SCK}}$)

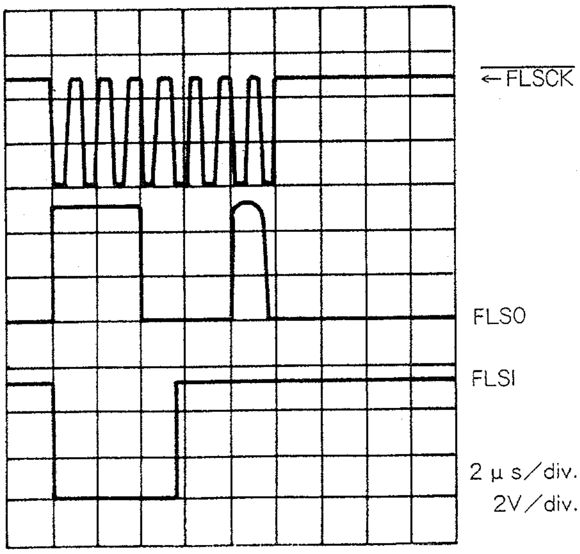


ENLARGEMENT
One word consists of 8 bits.



Connection Pin ㊻ of IC651 (FL SO)
- FLSO
  FL display／LED indication data with which the Main CPU instructs the FL driver.

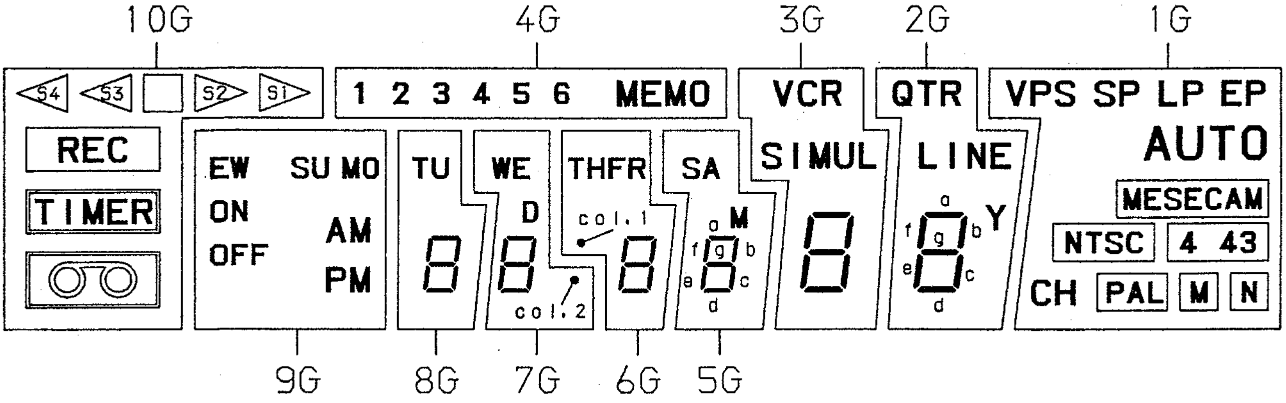
Connection Pin ㊺ of IC651 (FL SI)
- FLSI
  Front key input data that the FL driver transfers to the Main CPU.



2 μ s／div.
2V／div.

FL (DISPLAY)

FL900 10MT46GK
GRID ASSIGNMENT

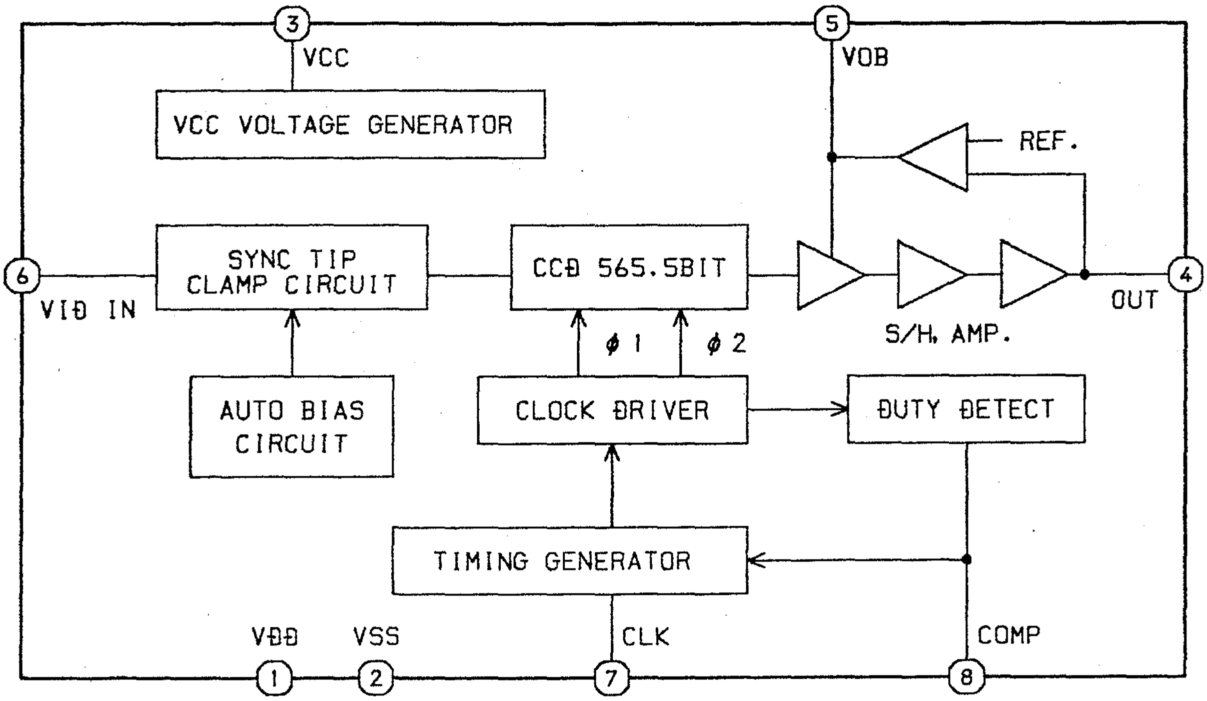

10G
4G
3G
2G
1G
S4
S3
S2
S1
REC
TIMER
1 2 3 4 5 6
MEMO
VCR
QTR
VPS SP LP EP
AUTO
EW
SU MO
ON
OFF
AM
PM
TU
WE
D
THFR
col.1
col.2
SA
M
SIMUL
LINE
Y
MESECAM
NTSC
4 43
CH
PAL
M
N
a
b
c
d
e
f
g
9G
8G
7G
6G
5G

ANODE CONNECTION

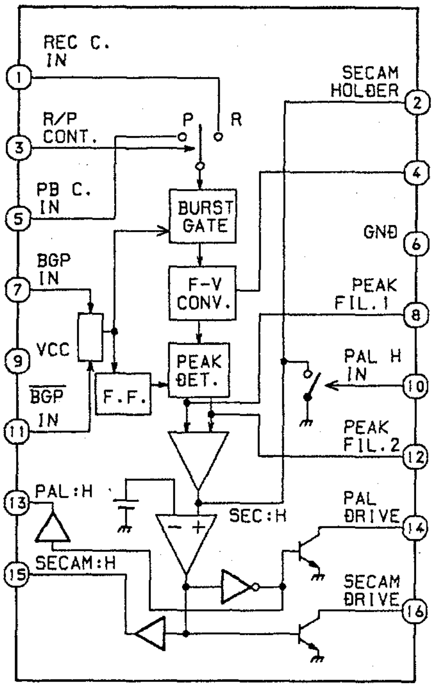
	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	(S2) ▷	ON	a	a	a	a	1	a	a	EP
P2	□	OFF	b	b	b	b	2	b	b	AUTO
P3	REC	–	c	c	c	c	5	c	c	4.43
P4	⊙⊙	–	d	d	d	d	MEMO	d	d	PAL
P5	TIMER	PM	e	e	e	e	6	e	e	M
P6	(S3) ◁	AM	f	f	f	f	3	f	f	MESECAM
P7	(S4) ◁	EW	g	g	g	g	4	g	g	N
P8	(S1) ▷	MO	TU	–	TH	SA	–	VCR	LINE	SP
P9	–	SU	–	WE	FR	–	–	SIMUL	QTR	VPS
P10	–	–	–	(col,2) ○	○ (col,1)	–	–	–	–	NTSC
P11	–	–	–	D	–	M	–	–	Y	LP
P12	–	–	–	–	–	–	–	–	–	CH

IC BLOCK DIAGRAM

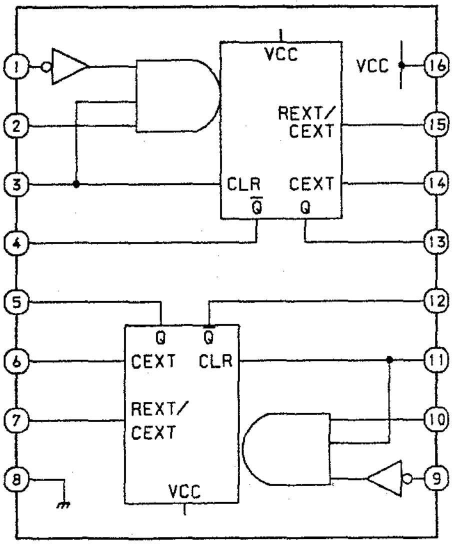
IC, LC8992


3
VCC
5
VOB
VCC VOLTAGE GENERATOR
REF.
6
VID IN
SYNC TIP CLAMP CIRCUIT
CCD 565.5BIT
4
OUT
S/H, AMP.
ϕ 1
ϕ 2
AUTO BIAS CIRCUIT
CLOCK DRIVER
DUTY DETECT
TIMING GENERATOR
VDD
VSS
CLK
COMP
1
2
7
8

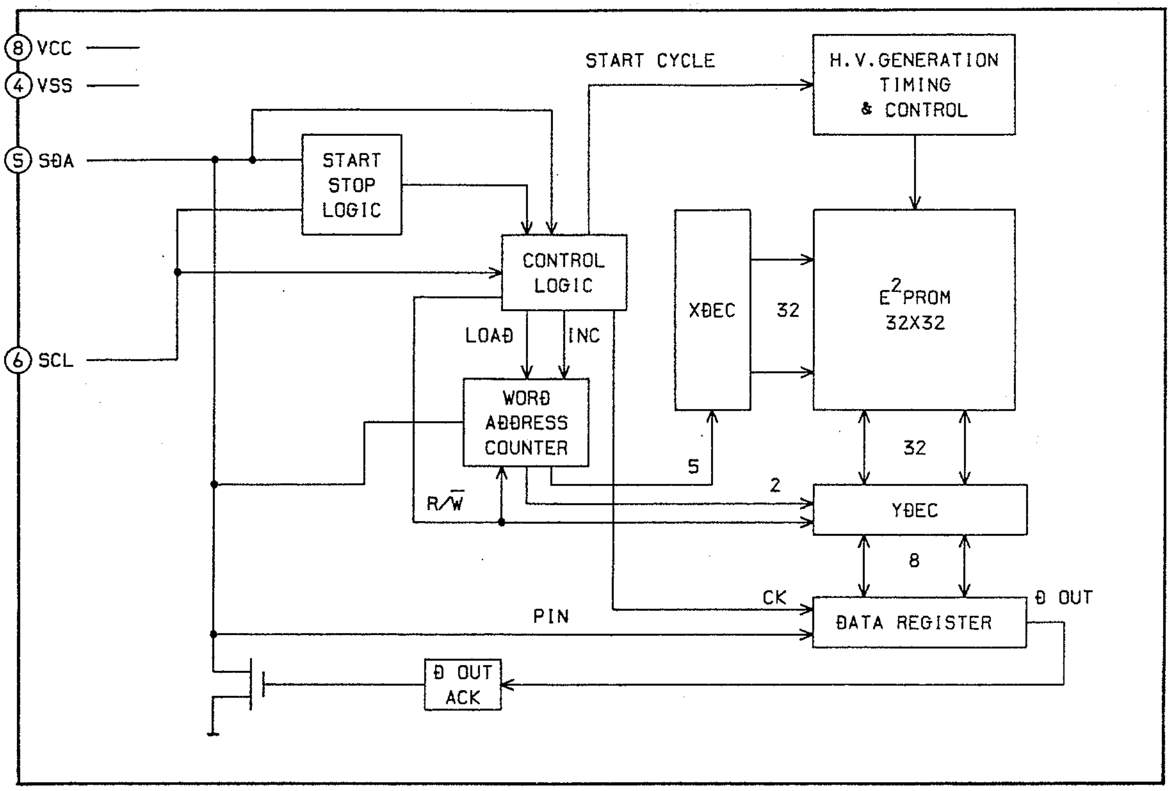
IC, LA7311


REC C. IN
1
R/P CONT.
3
P
R
PB C. IN
5
BGP IN
7
VCC
9
BGP IN
11
PAL:H
13
SECAM:H
15
SECAM HOLDER
2
4
GND
6
PEAK FIL.1
8
PAL H IN
10
PEAK FIL.2
12
SEC:H
PAL DRIVE
14
SECAM DRIVE
16
BURST GATE
F-V CONV.
PEAK DET.
F.F.

IC, HD74HC – 123


1
2
3
4
5
6
7
8
VCC
VCC
16
REXT/ CEXT
15
CLR
CEXT
14
Q
Q
13
12
Q
Q
CEXT
CLR
11
REXT/ CEXT
10
VCC
9

IC, X24CO1S



8 VCC
4 VSS
5 SDA
6 SCL
START STOP LOGIC
START CYCLE
H.V.GENERATION TIMING & CONTROL
CONTROL LOGIC
LOAD
INC
WORD ADDRESS COUNTER
XDEC
32
E²PROM 32X32
5
32
2
R/W̄
YDEC
8
CK
D OUT
DATA REGISTER
PIN
D OUT ACK

IC DESCRIPTION

IC, CXP80720 – 173Q (IC651)

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>$\overline{\text{KS2}}$</td><td>O</td><td>Main-unit key matrix output 2.</td></tr>
<tr><td>2</td><td>$\overline{\text{KS1}}$</td><td>O</td><td>Main-unit key matrix output 1.</td></tr>
<tr><td>3</td><td>$\overline{\text{KS0}}$</td><td>O</td><td>Main-unit key matrix output 0.</td></tr>
<tr><td>4</td><td>RF SWP (HSW-V)</td><td>O</td><td>Video head switching signal.</td></tr>
<tr><td>5</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>6</td><td>JOG VD</td><td>O</td><td>Artificial VD signal output during trick play.</td></tr>
<tr><td>7</td><td>V PB</td><td>O</td><td>Video-system playback ON signal. "H" during playback and trick play.</td></tr>
<tr><td>8</td><td>$\overline{\text{REC}}$</td><td>O</td><td>Video-system recording start signal. "L" during recording.</td></tr>
<tr><td>9</td><td>REC CTL</td><td>O</td><td>Signal to write CTL pulses during recording.</td></tr>
<tr><td>10</td><td>BEEP</td><td>O</td><td>Unused.</td></tr>
<tr><td>11</td><td>CM-F</td><td>O</td><td rowspan="2">Capstan motor drive control outputs.
<table>
<tr><td>CM – F</td><td>L</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>CM – R</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td></td><td>STOP</td><td>FWD</td><td>REV</td><td>BRAKE</td></tr>
</table></td></tr>
<tr><td>12</td><td>CM-R</td><td>O</td></tr>
<tr><td>13</td><td>TL-F</td><td>O</td><td rowspan="2">Loading motor drive control outputs.
<table>
<tr><td>TL – F</td><td>L</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>TL – R</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td></td><td>STOP</td><td>FWD</td><td>REV</td><td>BRAKE</td></tr>
</table></td></tr>
<tr><td>14</td><td>TL-R</td><td>O</td></tr>
<tr><td>15</td><td>$\overline{\text{KR3}}$</td><td>I</td><td>Main-unit key matrix input 3.</td></tr>
<tr><td>16</td><td>$\overline{\text{KR2}}$</td><td>I</td><td>Main-unit key matrix input 2.</td></tr>
<tr><td>17</td><td>$\overline{\text{KR1}}$</td><td>I</td><td>Main-unit key matrix input 1.</td></tr>
<tr><td>18</td><td>$\overline{\text{KR0}}$</td><td>I</td><td>Main-unit key matrix input 0.</td></tr>
<tr><td>19</td><td>$\overline{\text{C-OUT}}$</td><td>I</td><td>Cassette-out signal.</td></tr>
<tr><td>20</td><td>$\overline{\text{C-IN}}$</td><td>I</td><td>Cassette-in signal.</td></tr>
<tr><td>21</td><td>$\overline{\text{C-START}}$</td><td>I</td><td>Cassette start signal.</td></tr>
<tr><td>22</td><td>TOP SENS</td><td>I</td><td>Tape top detection signal.</td></tr>
<tr><td>23</td><td>END SENS</td><td>I</td><td>Tape end detection signal.</td></tr>
<tr><td>24</td><td>$\overline{\text{TEST}}$</td><td>I</td><td>Test/service mode start switch. "L" at the start.</td></tr>
<tr><td>25</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>26</td><td>$\overline{\text{DOC}}$</td><td>I</td><td>Unused.</td></tr>
<tr><td>27</td><td>POWER</td><td>O</td><td>Main-unit power ON signal. "H" during power ON.</td></tr>
<tr><td>28</td><td>PICTURE</td><td>O</td><td>Clear picture ON signal. "H" during ON.</td></tr>
<tr><td>29</td><td>V MUTE</td><td>O</td><td>Video muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>JOG</td><td>O</td><td>Trick play ON signal.</td></tr>
</table>

Pin No.	Pin Name	I/O	Description
31	——	O	Unused.
32	50/$\overline{60}$	O	50-field/60-field discrimination signal. "H" : 50-field, "L" : 60-field.
33	$\overline{\mathrm{EE}}$	O	Video output EE/PB switching signal. "L" : EE.
34	$\overline{\mathrm{NTSC\ PB}}$	O	NTSC playback signal. "L" : NTSC ON and played on PAL TV.
35	$\overline{4.43}$	O	NTSC playback signal. "L" : NTSC 4.43.
36	$\overline{\mathrm{NTSC}}$	O	Unused.
37	$\overline{\mathrm{MESECAM}}$	O	MESECAM detection signal. "L" : MESECAM.
38	——	–	Unused.
39	VSS	–	GND
40	$\overline{\mathrm{RESET}}$	I	System reset input
41	VSS	–	GND
42	XTAL	O	A crystal oscillator that generates a 12MHz main clock signal is connected.
43	EXTAL	I	A crystal oscillator that generates a 12MHz main clock signal is connected.
44	——	I	Unused.
45	FL SI	I	Serial data input when communicated with CXP2201.
46	FL SO	O	Serial data output when communicated with CXP2201.
47	$\overline{\mathrm{FL\ SCK}}$	O	Serial data clock when communicated with CXP2201.
48	$\overline{\mathrm{FL\ CS}}$	O	Chip select signal when communicated with CXP2201. "L" during selection.
49	$\overline{\mathrm{SP}}$	O	STANDARD PLAY
50	$\overline{\mathrm{LP}}$	O	LONG PLAY
51	$\overline{\mathrm{SLAV\ RST}}$	O	Signal to reset CXP2201.
52	A VSS	–	GND
53	A VREF	–	POWER
54	A VDD	–	POWER
55	——	–	GND
56	AFT CURVE	I	A/D input to detect the tuner status.
57	——	–	GND
58	——	–	GND
59	V LEVEL	I	Video envelope detection input (analog input) for autotracking.
60	——	–	GND
61	N POS	I	RF SWP control input (in 60-field mode).
62	P POS	I	RF SWP control input (in 50-field mode).
63	$\overline{\mathrm{SYNC\ DET}}$	I	Discriminates whether or not the H. sync is present. "L" : H.sync is present.
64	——	–	BACK 5V

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>65</td><td>C-SYNC</td><td>I</td><td>Composite sync input.</td></tr>
<tr><td>66</td><td>C-SYNC</td><td>I</td><td>Composite sync input.</td></tr>
<tr><td>67</td><td>PBCTL</td><td>I</td><td>Playback CTL input.</td></tr>
<tr><td>68</td><td>D PG</td><td>I</td><td>Drum PG input.</td></tr>
<tr><td>69</td><td>D FG</td><td>I</td><td>Drum FG input.</td></tr>
<tr><td>70</td><td>CAP FG</td><td>I</td><td>Capstan FG input.</td></tr>
<tr><td>71</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>72</td><td>DRUM D/A</td><td>O</td><td>DRUM control signal</td></tr>
<tr><td>73</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>74</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>75</td><td>CAP PWM</td><td>O</td><td>CAPSTAN control signal</td></tr>
<tr><td>76</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>77</td><td>T-REEL</td><td>I</td><td>Take-up reel rotation detection.</td></tr>
<tr><td>78</td><td>$\overline{\text{WAKE UP}}$</td><td>I</td><td>Power failure detection.</td></tr>
<tr><td>79</td><td>CG STRB</td><td>O</td><td>Unused.</td></tr>
<tr><td>80</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>81</td><td>——</td><td>–</td><td>Unused.</td></tr>
<tr><td>82</td><td>SDA1</td><td>I/O</td><td>Data input/output when communicated with EEPROM.</td></tr>
<tr><td>83</td><td>SCL1</td><td>O</td><td>System clock when communicated with EEPROM.</td></tr>
<tr><td>84</td><td>PWM</td><td>O</td><td>PWM output for tuner.</td></tr>
<tr><td>85</td><td>$\overline{\text{RMC}}$</td><td>I</td><td>Remote control signal input.</td></tr>
<tr><td>86</td><td>TEX</td><td>I</td><td>A crystal oscillator that generates a 32.768KHz subclock signal is connected.</td></tr>
<tr><td>87</td><td>EX</td><td>O</td><td>A crystal oscillator that generates a 32.768KHz subclock signal is connected.</td></tr>
<tr><td>88</td><td>VSS</td><td>–</td><td>GND</td></tr>
<tr><td>89</td><td>VDD</td><td>–</td><td>POWER</td></tr>
<tr><td>90</td><td>VDD</td><td>–</td><td>POWER</td></tr>
<tr><td>91</td><td>$\overline{\text{TV}}$/VCR</td><td>O</td><td>RF output TV/VCR switching. "H" in VCR mode.</td></tr>
<tr><td>92</td><td>$\overline{\text{LI}}$/TU (V)</td><td>O</td><td rowspan="2">Video/audio input select signal.
<table>
<tr><th></th><th>TUNER</th><th>SIMAL</th><th>LINE</th></tr>
<tr><td>$\overline{\text{LI}}$/TU (V)</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>$\overline{\text{LI}}$/TU (A)</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>93</td><td>$\overline{\text{LI}}$/TU (A)</td><td>O</td></tr>
<tr><td>94</td><td>A MUTE</td><td>O</td><td>Audio muting signal. "H" during muting.</td></tr>
<tr><td>95</td><td>T MUTE</td><td>O</td><td>Tuner audio muting signal. "H" during muting.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>96</td><td>BAND1</td><td>O</td><td rowspan="2">Tuner band switching signals.<table><tr><th></th><th>VL</th><th>VH</th><th>U</th><th>LINE</th></tr><tr><td>BAND1</td><td>L</td><td>L</td><td>H</td><td>H</td></tr><tr><td>BAND2</td><td>L</td><td>H</td><td>L</td><td>H</td></tr></table></td></tr>
<tr><td>97</td><td>BAND2</td><td>O</td></tr>
<tr><td>98</td><td>AFT DEF</td><td>O</td><td>AFT defeat signal. “H” when AFT is off and tuner is preset.</td></tr>
<tr><td>99</td><td>VD MASK</td><td>O</td><td>VD mask signal to control the video system. “H” when masked.</td></tr>
<tr><td>100</td><td>$\overline{\text{KS3}}$</td><td>O</td><td>Main-unit key martix output 3.</td></tr>
</table>

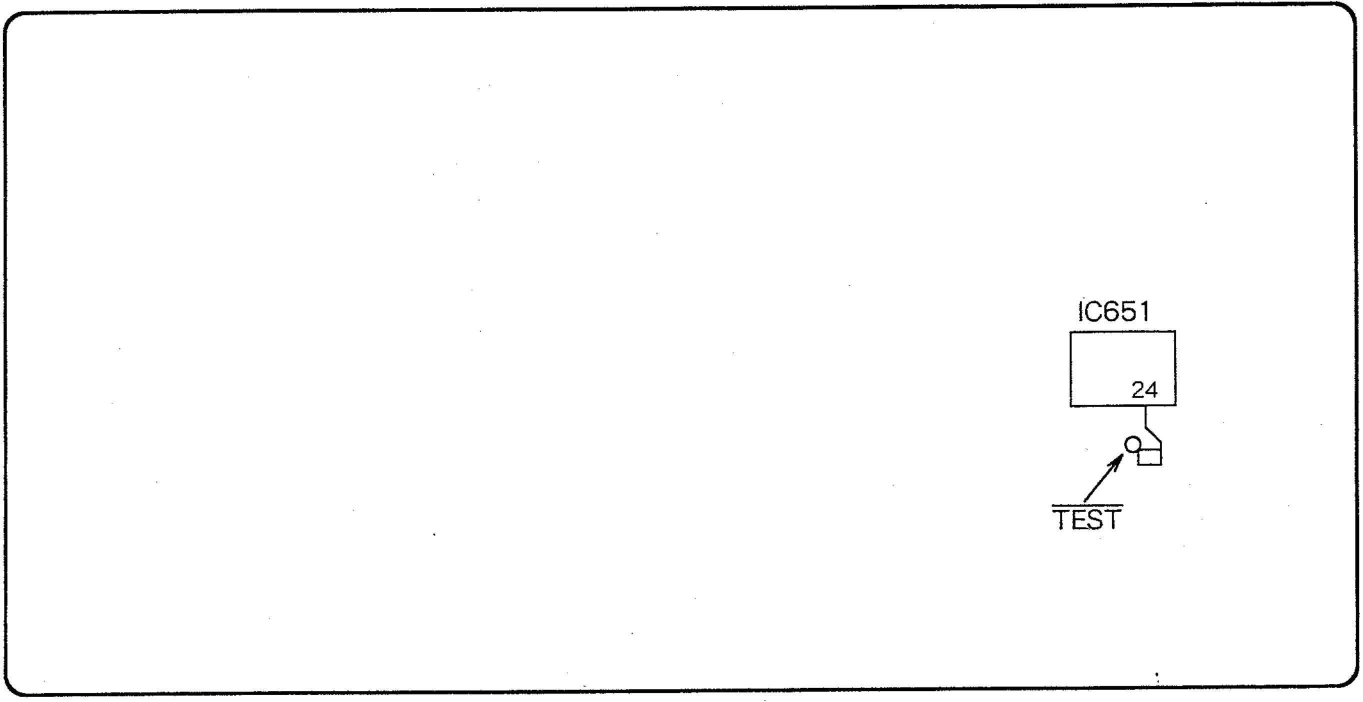
IC, CXP2201AS

Pin No.	Pin Name	I/O	Description
1	EXT	I	Ceramic connector for system clock oscillator use. When using an external clock, input to EXT, and leave XT open.
2	XT	O	
3	VSS	–	Connect to GND.
4 ≀ 7	K0 ≀ K3	I	Key input. (with built-in pull-down resistor)
8	VDD	–	Connect to VDD.
9 ≀ 17	S0 ≀ S8	O	Exclusive segment output. (with built-in pull-down resistor)
18 ≀ 20	S9 ≀ S11	O	Exclusive segment output. (with built-in pull-down resistor)
21	S12/T11	O	Not used.
22	S13/T10		
23	T9	O	Exclusive timing output. (with built-in pull-down resistor)
24	T8		
25 ≀ 32	T7 ≀ T0	O	Exclusive timing output. (with built-in pull-down resistor)
33	VFDP	–	Load power supply for FDP.
34 ≀ 36	$\overline{\text{PCT LED}}$ (PO) ≀ $\overline{\text{TR LED}}$ (P2)	O	Port I/O. (large-current output)
37	KD	O	Not used.
38	FL SI	I	Serial data input.
39	FL SO	O	Serial data output.
40	$\overline{\text{FL CLK}}$	I	Serial data clock input.
41	$\overline{\text{FL CS}}$	I	Chip select input.
42	$\overline{\text{RST}}$	I	Reset. (with built-in pull-up resistor and power-on reset circuit)

SERVICE MODES

1. Starting the Service Modes

A MAIN C.B


IC651
24
TEST

1) After turning the power on, short the TEST and GND patterns on the main circuit board.
   (Service mode 1 starts.)
   Each time the patterns are shorted, the service mode switches from 1 to 2, 3 and back to 1.
2) The fluorescent display shows the service mode number.

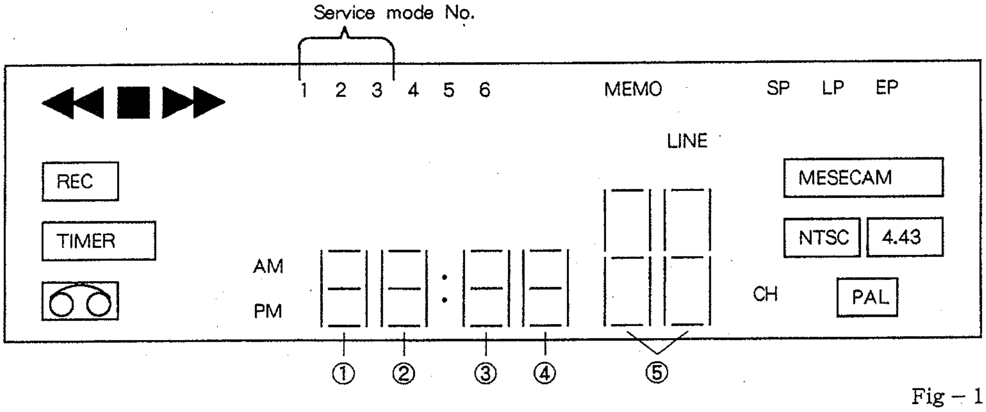

Service mode No.
1 2 3 4 5 6
MEMO
SP LP EP
LINE
REC
TIMER
AM
PM
MESECAM
NTSC
4.43
CH
PAL
①
②
③
④
⑤

Fig – 1

2. Clearing the Service Mode

Unplug the power cord from the AC outlet.

3. Details of Service Modes

1) Service mode 1

The fluorescent display shows the state in the below. (Reter to figure – 1)

① Mechanism position.
② Mechanism error.
③ Tape TOP／END.
④ Mechanism operation mode
⑤ Key input cord (This mode allows only the insertion or ejection of a cassette).

Display contents

① Mechanism position

When the display is varied, mechanism mode switch, operates.

② Mechanism error

Error Code	Error Contents
0	Normal
1	Loading error
2	Unloading error
3	Sledding error (LM Motor Reverse)
4	Unsledding error (LM Motor Forward)
5	Leader tape processor error
6	Drum error
7	Reel error

③ Tape TOP／END.

Code	Tape state
0	Normal
1	Tape end
2	Tape stop
3	Tape TOP／END

④ Mechanism operation mode

Code	Mode
0	STOP
1	EJECT
2	STAND BY
3	FF
4	RWD
5	PLAY
6	CUE
7	REV
8	STILL
A	REC
b	REC.P
C	Power Off (Ejected)
d	Power Off (Tape IN)

⑤ Key input code

Mechanism	0 ?	Ten key	1 ?	Tuner	2 ?	Timer	3 ?
POWER	0	0 Ⓡ	0	PRESET	0	CLK／CNT Ⓡ	0
EJECT	1	1 Ⓡ	1	CH-SET	1	TIME SET	1
STOP	2	2 Ⓡ	2	AUTO／MAN	2	CHECK／PRGM	2
FF	3	3 Ⓡ	3	CLEAR／BAND	3	NEXT	3
RWD	4	4 Ⓡ	4	SET (+)	4	CLEAR	4
PLAY	5	5 Ⓡ	5	SET (−)	5		
REC	6	6 Ⓡ	6	CH (+)	6		
PAUSE／STILL	7	7 Ⓡ	7	CH (−)	7	SP／LP	7
		8 Ⓡ	8			C-RESET Ⓡ	8
		9 Ⓡ	9	INPUT Ⓡ	9	C-MEMO Ⓡ	9
T-REC	d					SYSTEM	A
						SUPER CLEAR	C

* Ⓡ : Remote controller input only.

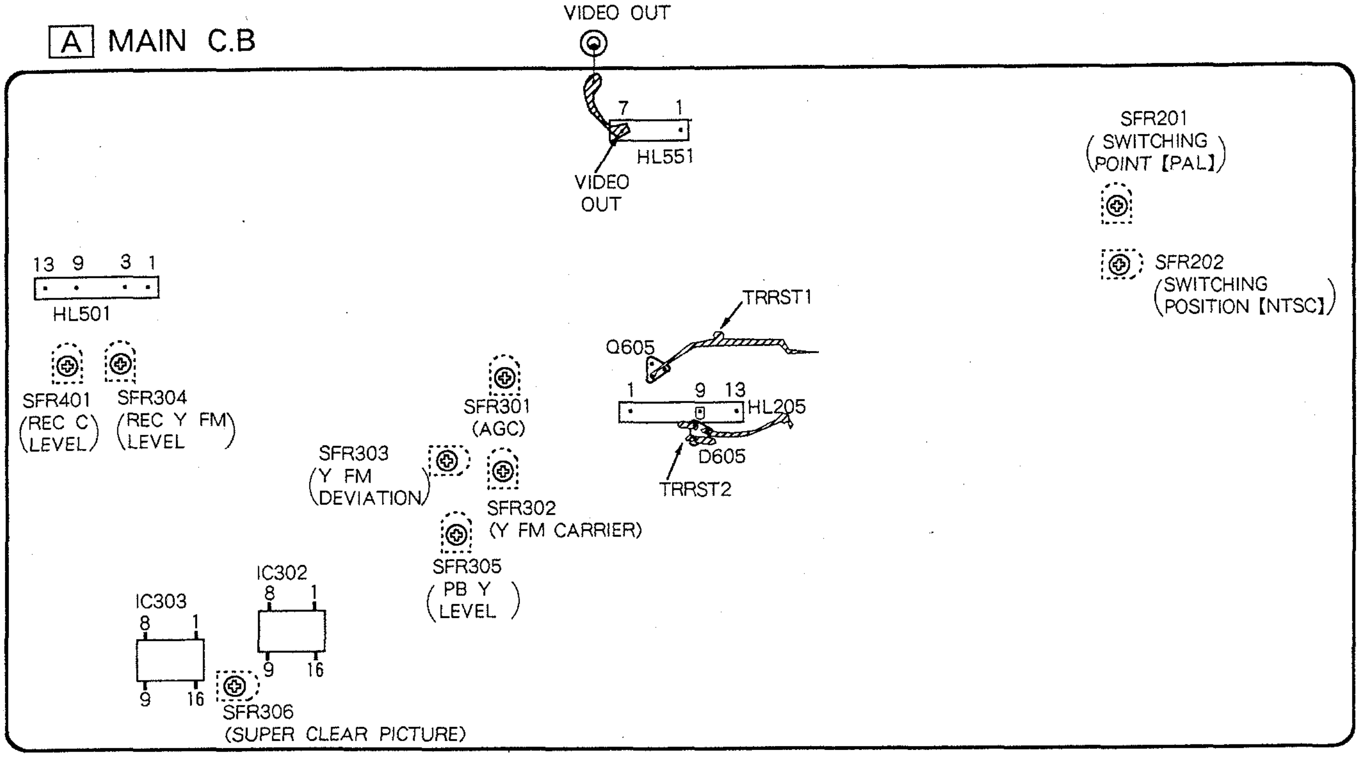
2) Service mode 2
Disable the following sensor inputs.
① TOP SENSOR
② END SENSOR
③ T－REEL SENSOR

3) Service mode 3
Advances the clock speed 60 times.
Advances one minute every second.
Advances one hour every minute.

ELECTRICAL ADJUSTMENT

1. SERVICING LOCATIONS

A MAIN C.B

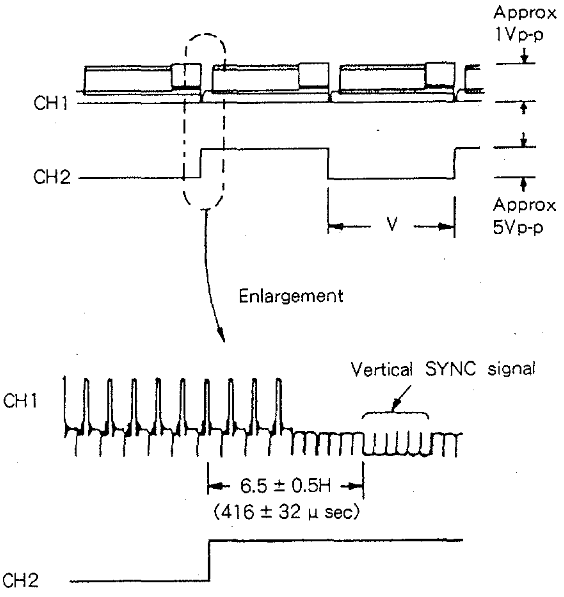

VIDEO OUT
7
1
HL551
VIDEO OUT
SFR201
(SWITCHING POINT [PAL])
SFR202
(SWITCHING POSITION [NTSC])
13 9 3 1
HL501
TRRST1
Q605
1 9 13
HL205
D605
TRRST2
SFR401
(REC C LEVEL)
SFR304
(REC Y FM LEVEL)
SFR301
(AGC)
SFR303
(Y FM DEVIATION)
SFR302
(Y FM CARRIER)
SFR305
(PB Y LEVEL)
IC302
8 1
9 16
IC303
8 1
9 16
SFR306
(SUPER CLEAR PICTURE)

1. PAL Head Switching Point Adjustment

Mode : Playback TTV – P1

Oscilloscope : CH – 1 : HL551 pin ⑦ (VIDEO OUT)

CH – 2 : HL501 pin ③ (RF SWP)


Approx 1Vp-p
CH1
CH2
V
Approx 5Vp-p
Enlargement
Vertical SYNC signal
CH1
6.5 ± 0.5H
(416 ± 32 μ sec)
CH2

Adjustment procedure

(1) Set the tracking to the center.

※ Short the TRRST1 to TRRET2 on the MAIN circuit board.

(2) Adjust SFR201 so the RF SWP's leading edge is 6.5H ± 0.5H from V SYNC.

2. NTSC Head Switching Point Adjustment (HV – G150 & HV – DK975)

Mode : Playback TTV – N1

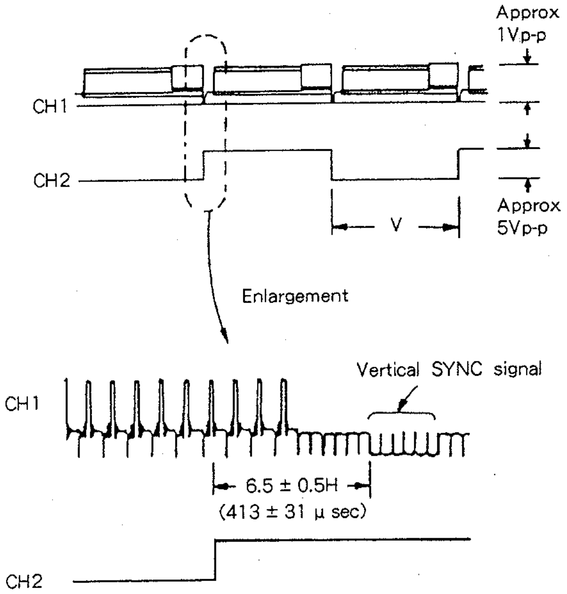
Oscilloscope : CH – 1 HL551 pin⑦ (VIDEO OUT)
CH – 2 HL501 pin③ (RF SWP)

Adjustment procedure

(1) Set the tracking to the center.

※ Short the TRRST1 to TRRST2 on the MAIN circuit board.

(2) Adjust SFR202 so the RF SWP's leading edge is 6.5H ± 0.5H from V SYNC.


Approx 1Vp-p
CH1
CH2
Approx 5Vp-p
V
Enlargement
Vertical SYNC signal
CH1
6.5 ± 0.5H
(413 ± 31 μ sec)
CH2

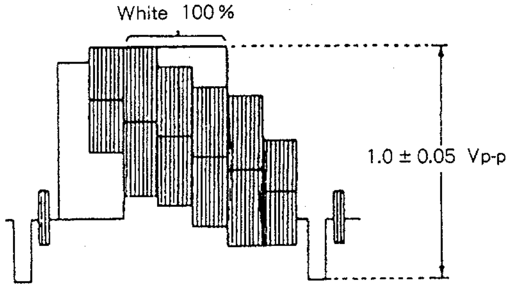
3. PB Y Level Adjustment

Mode : Playback TTV – P1.

Oscilloscope : VIDEO OUT (terminate with 75 Ω or connect a monitor)

Adjustment procedure

(1) Adjust SFR305 so the level from the sync tip to 100% white is 1.0V ± 0.05Vp-p.


White 100%
1.0 ± 0.05 Vp-p

4. Super Clear Picture Adjustment

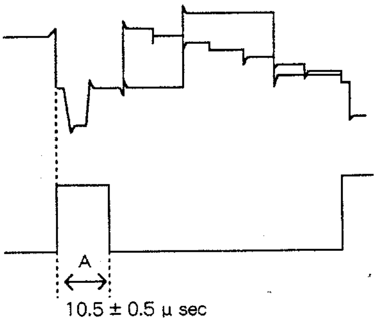
Mode : Playback TTV – P1.

Oscilloscope : CH – 1 IC302 pin② (PB Y)
CH – 2 IC303 pin④ (MASK SIG)

Adjustment procedure

(1) Adjust SFR306 so the leading edge of the mask signal is aligned with the black level edge of the PB Y signal. (Turn on the super clear)

(2) Check that section A shown in the diagram below is within 10.5 ± 0.5 μ sec.


A
10.5 ± 0.5 μ sec

5. AGC Adjustment

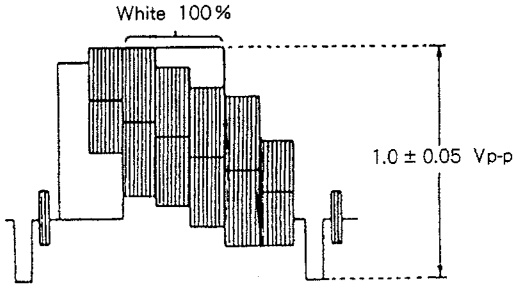
Mode : E – E

VIDEO IN : PAL color bar (with 100% white level)

Oscilloscope : VIDEO OUT (terminate with 75 Ω or connect a monitor)

Adjustment procedure

(1) Adjust SFR301 so the level from the sync tip to 100% white is 1.0V ± 0.05Vp-p.


White 100%
1.0 ± 0.05 Vp-p

6. Y FM Carrier Adjustment

Mode : E – E

VIDEO IN : No signal

Frequency counter : HL501 pin⑨

Adjustment procedure

(1) Adjust SFR302 so the frequency counter reads 3.8MHz ± 0.05MHz.

7. Y FM Deviation Adjustment

※ The Y FM carrier adjustment should be completed.

Mode : REC/PB

VIDEO IN : PAL color bar (with 100% white level)

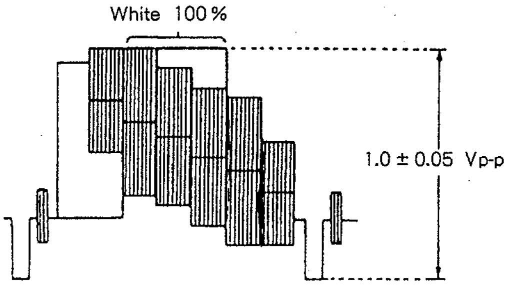
Oscilloscope : VIDEO OUT (terminate with 75 Ω or connect a monitor)

Adjustment procedure

(1) Record the color bar signals shown above and playback the recorded section.

(2) Check that the playback output level is 1.0 ± 0.05 Vp-p.

(3) If the specification is not satisfied, adjust SFR303 and perform steps (1) and (2) again.



8. REC Y FM Level Adjustment

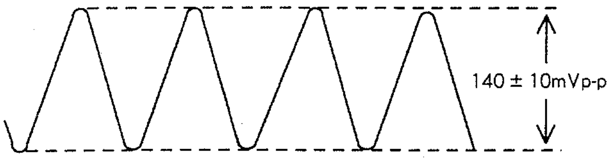
Mode : E − E

VIDEO IN : No signal

Oscilloscope : HL501 pin⑨

Adjustment procedure

(1) Adjust SFR304 so the level is 140mV ± 10mVp-p



9. REC C Level Adjustment

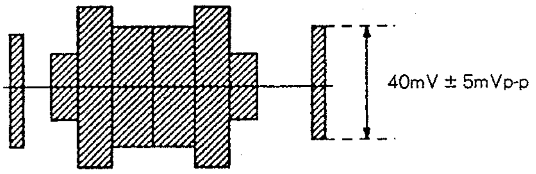
Mode : E − E

VIDEO IN : PAL color bar (with 100% white)

Oscilloscope : HL501 pin⑪

Adjustment procedure

(1) Adjust SFR401 so the color burst level is 40mV ± 5mVp-p



MECHANICAL ADJUSTMENT

1. TAPE PATH COARSE ADJUSTMENT

1 - 1) Adjustment Points

Ⓐ Impedance Roller
Ⓑ Supply Guide Roller
Ⓒ Take-Up Guide Roller
Ⓓ Tape Guide

1 - 2) Checking Procedure

1 - 2 - 1) Load a blank tape and play it back.

1 - 2 - 2) Check that the tape dose not curl at guides Ⓐ~Ⓓ.
* Perform play and stop several times to check. (See Figure-1)

1 - 2 - 3) Check that the tape runs smoothly so its bottom edge is parallel with the drum lead. (See Figure-2)

1 - 2 - 4) Also check that the tape does not curl at the "Ⓐ Impedance Roller" during review.

1 - 2 - 5) Check that the tape does not curl between the "Ⓒ Take-Up Guide Roller" and "Ⓓ Tape Guide". If it does curl, perform 2. ACE HEAD ADJUSTMENT.

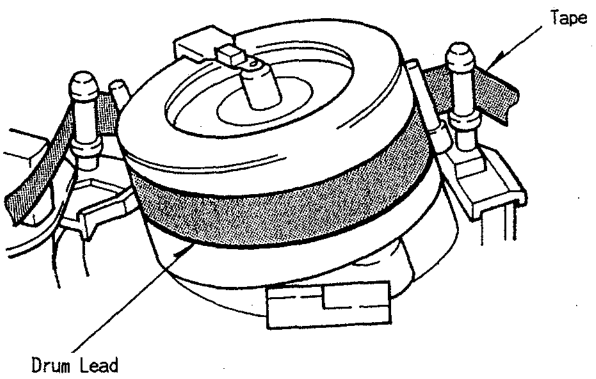

Tape
Drum Lead

Fig-2

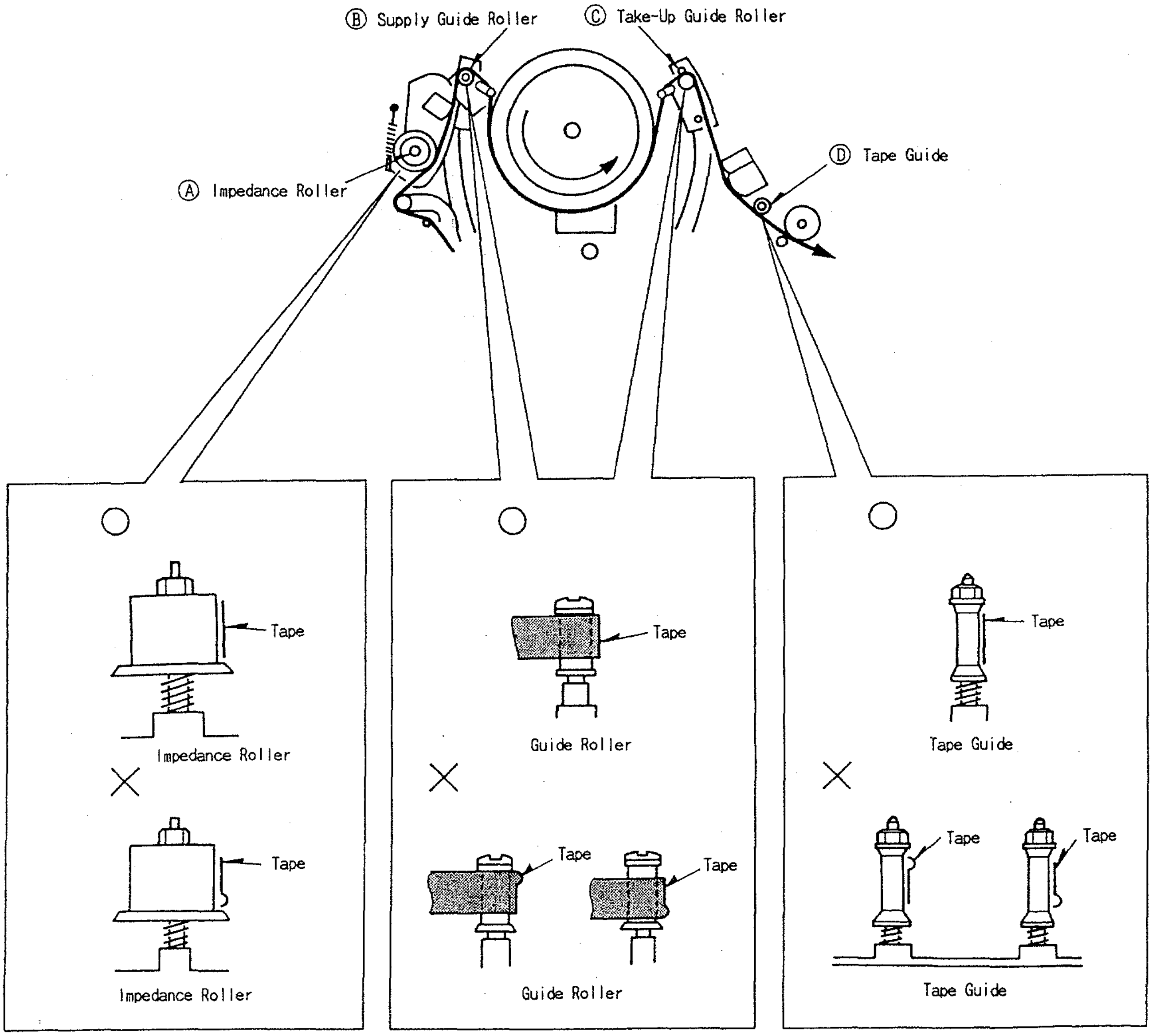

Ⓑ Supply Guide Roller
Ⓒ Take-Up Guide Roller
Ⓐ Impedance Roller
Ⓓ Tape Guide
○
Tape
Impedance Roller
×
Tape
Impedance Roller
○
Tape
Guide Roller
×
Tape
Tape
Guide Roller
○
Tape
Tape Guide
×
Tape
Tape
Tape Guide

Fig-1

1 – 3) Adjustment Procedure

1 – 3 – 1) If tape curls, adjust the "Ⓐ Impedance Roller", "Ⓑ Supply Guide Roller", "Ⓓ Tape Guide" and "Ⓒ Take-Up Guide Roller" in this order. (See Figure-3)

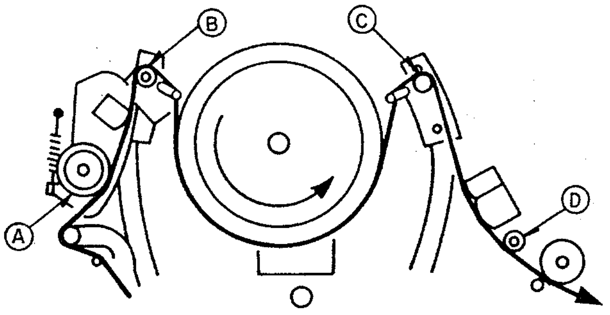
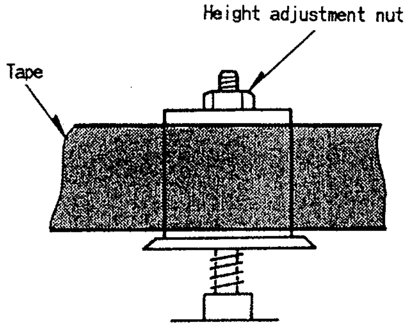


Fig – 3

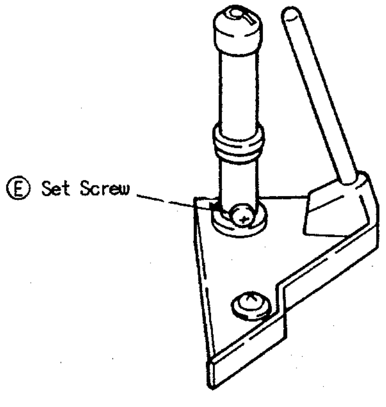
1 – 3 – 2) If tape curls at the "Ⓐ Impedance Roller", adjust the "Height Adjustment Nut" so the tape runs as shown in Figure-4.


Height adjustment nut
Tape

Ⓐ Impedance Roller

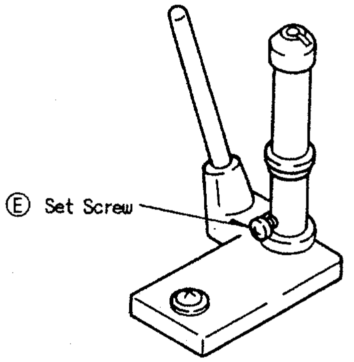
Fig – 4

1 – 3 – 3) If tape curls at the "Ⓑ Supply Guide Roller" or "Ⓒ Take-Up Guide Roller", loosen the "Ⓔ Set Screw" so the "Guide Roller" turns slightly and use an adjustment screwdriver to adjust the height of the "Guide Roller". (See Figure-5)



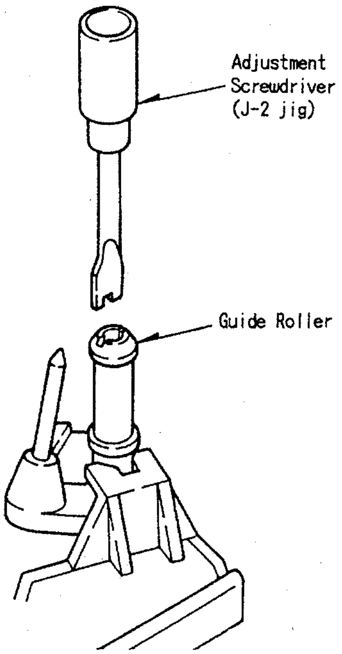
Ⓑ Supply Guide Roller

Fig – 5 – 1



Ⓒ Take-Up Guide Roller

Fig – 5 – 2

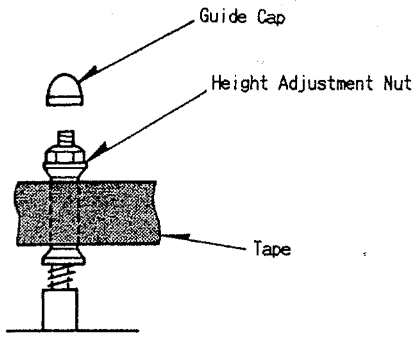

Adjustment Screwdriver (J-2 jig)
Guide Roller

Ⓑ Supply Guide Roller

Fig – 5 – 3

1 – 3 – 4) If tape curls at the "Ⓓ Tape Guide", remove the "Guide Cap" and adjust the "Height Adjustment Nut". (See Figure-6)

Note : Since the "Guide Cap" is put on with a small amount of adhesive, turn it to the left and right slightly and then pull it out gradually.


Guide Cap
Height Adjustment Nut
Tape

Ⓓ Tape Guide

Fig – 6

2. ACE HEAD ADJUSTMENT (HEIGHT/TILT/AZIMUTH)

1) Play a blank tape. (See Figure-7)
2) Use the "Ⓕ Height Adjustment Nut" and "Ⓗ Tilt Adjustment Screw" to adjust the height and tilt of the "ACE Head" so the tape runs smoothly at the "Ⓓ Tape Guide".
3) Connect an oscilloscope to the AUDIO OUT jack. Set the oscilloscope's TIME range to 0.5 msec/DIV.
4) Play the alignment tape (TTV－P1).
5) Adjust the "Ⓕ Height Adjustment Nut" so the amplitude of the waveform on the oscilloscope is maximum. (See Figure-8)
6) If the tape is slack between the "Ⓒ Take-Up Guide Roller" and "ACE Head", adjust the "Ⓗ Tilt Adjustment Screw" to remove the slack.
7) Play the alignment tape (TTV－P2).
8) Adjust the "Ⓖ Azimuth Adjustment Screw" so the amplitude of the waveform on the oscilloscope is maximum.

3. FM ENVELOPE ADJUSTMENT

1) Connect an oscilloscope as follows.
   CH－1 : HL501 pin ⑦ (PB Y) on MA C. B
   CH－2 : HL501 pin ③ (RF SWP) on MA C. B
   Trigger the oscilloscope with CH－2 and set the TIME range to 5 msec/DIV.
2) Play the alignment tape (TTV－P1L).
3) Set the tracking to the preset center.
   * Switch to the manual tracking mode (press the TRACKING $\boxed{\vee}$ button) and then return to the auto tracking mode (press the TRACKING $\boxed{\vee}$ and $\boxed{\wedge}$ buttons simultaneously). Press the TRACKING $\boxed{\vee}$ button once before the AUTO TRACKING LED flashes.
4) Observing the waveform on the oscilloscope, adjust the "Ⓑ Supply Guide Roller" and "Ⓒ Take-Up Guide Roller" so the FM waveform is flat as shown in Fig. 9 a. (See Figure-1)
   Note : If the envelope is too small, turn the "Ⓘ X-Value Adjustment Nut" so 2~3 ridges protrude. (See Figure-10)
5) If the envelope is as shown in Fig. 9 b, turn the "Ⓑ Supply Guide Roller" counterclockwise.
   If the envelope is as shown in Fig. 9 c, turn the "Ⓑ Supply Guide Roller" clockwise.
6) If the envelope is as shown in Fig. 9 d, turn the "Ⓒ Take-Up Guide Roller" counterclockwise.
   If the envelope is as shown in Fig. 9 e, turn the "Ⓒ Take-Up Guide Roller" clockwise.

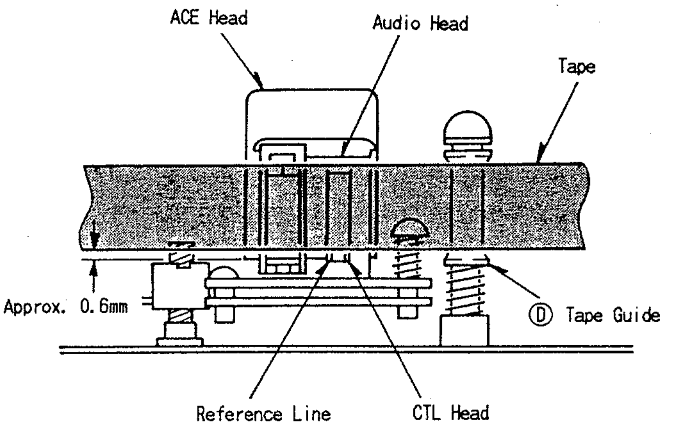

ACE Head
Audio Head
Tape
Approx. 0.6mm
Ⓓ Tape Guide
Reference Line
CTL Head

Fig - 7

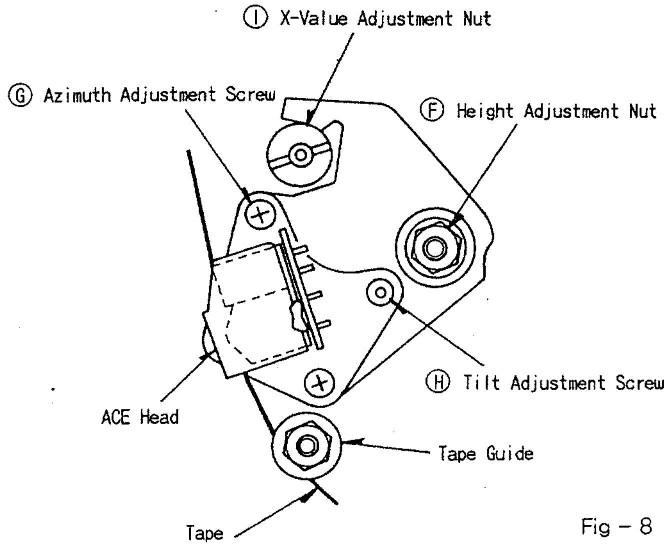

Ⓘ X-Value Adjustment Nut
Ⓖ Azimuth Adjustment Screw
Ⓕ Height Adjustment Nut
Ⓗ Tilt Adjustment Screw
ACE Head
Tape Guide
Tape

Fig - 8

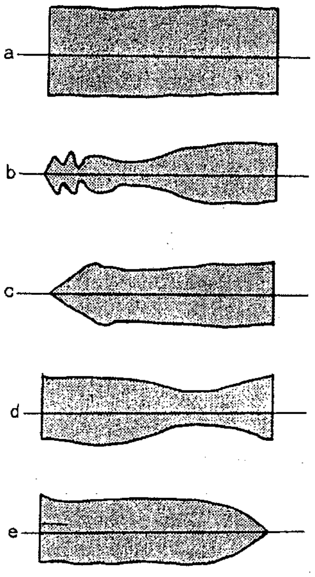


Fig - 9

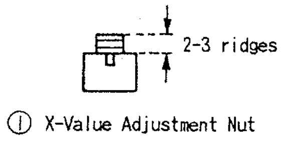

2-3 ridges
Ⓘ X-Value Adjustment Nut

Fig - 10

7) After adjusting the FM envelope, tighten the "Ⓔ Set Screw". (See Figure-5)
8) Repeat playback, cue and review, and check that the normal FM envelope can be restored immediately.

4. X-VALUE ADJUSTMENT

1) Connect an oscilloscope in the same way as in FM envelope adjustment.
2) Play the alignment tape (TTV－P1L).
3) Set the tracking to the preset center.
   * Switch to the manual tracking mode (press the TRACKING $\boxed{\vee}$ button) and then return to the auto tracking mode (press the TRACKING $\boxed{\vee}$ and $\boxed{\wedge}$ buttons simultaneously). Press the TRACKING $\boxed{\vee}$ button once before the AUTO TRACKING LED flashes.
4) Adjust the "Ⓘ X-value Adjustment Nut" so the amplitude of the waveform on the oscilloscope is maximum.
5) Vary the tracking in the $\boxed{\wedge}$ or $\boxed{\vee}$ direction from the preset center and check that the amplitude drops while the waveform is flat.
6) Check that there is no curling of tape at the Ⓐ～Ⓓ guides.
   If it curls, perform adjustment starting from 1. TAPE PATH COARSE ADJUSTMENT. (See Figure-1)
7) After adjustment is completed, fix the "Ⓔ Set Screw" and "Ⓗ Tilt Adjustment Screw" with locking compound.

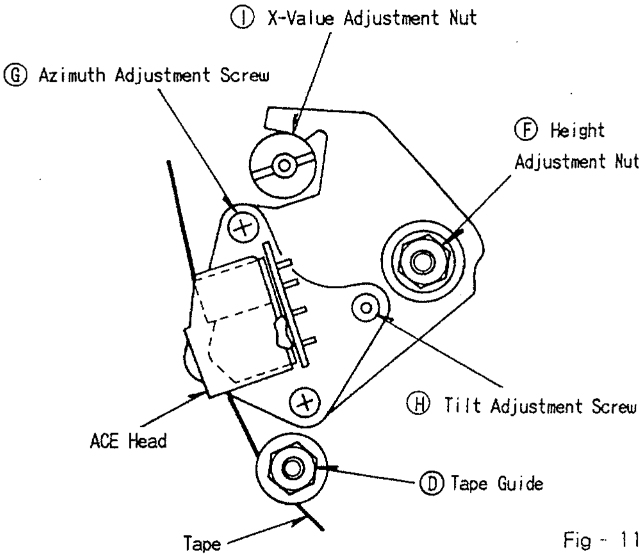
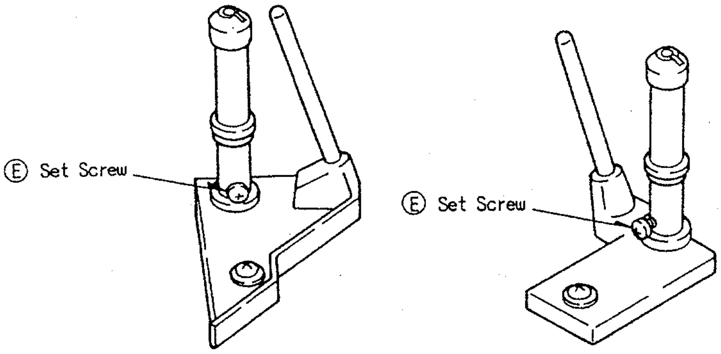

Ⓘ X-Value Adjustment Nut
Ⓖ Azimuth Adjustment Screw
Ⓕ Height Adjustment Nut
Ⓗ Tilt Adjustment Screw
ACE Head
Ⓓ Tape Guide
Tape

Fig - 11

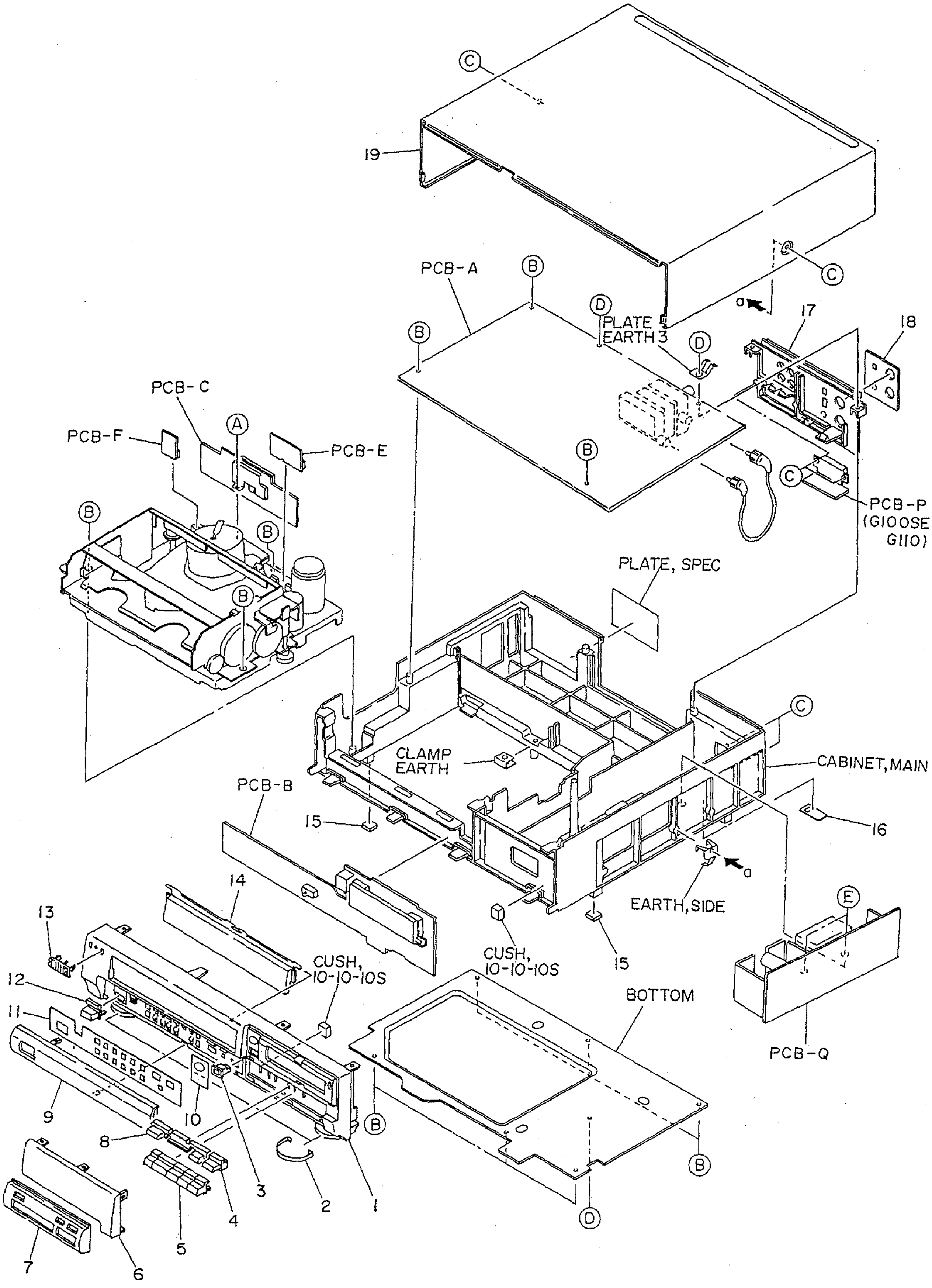

Ⓔ Set Screw
Ⓔ Set Screw

Ⓑ Supply Guide Roller

Ⓑ Take-Up Guide Roller

Fig - 12

MECHANICAL EXPLODED VIEW 1/1



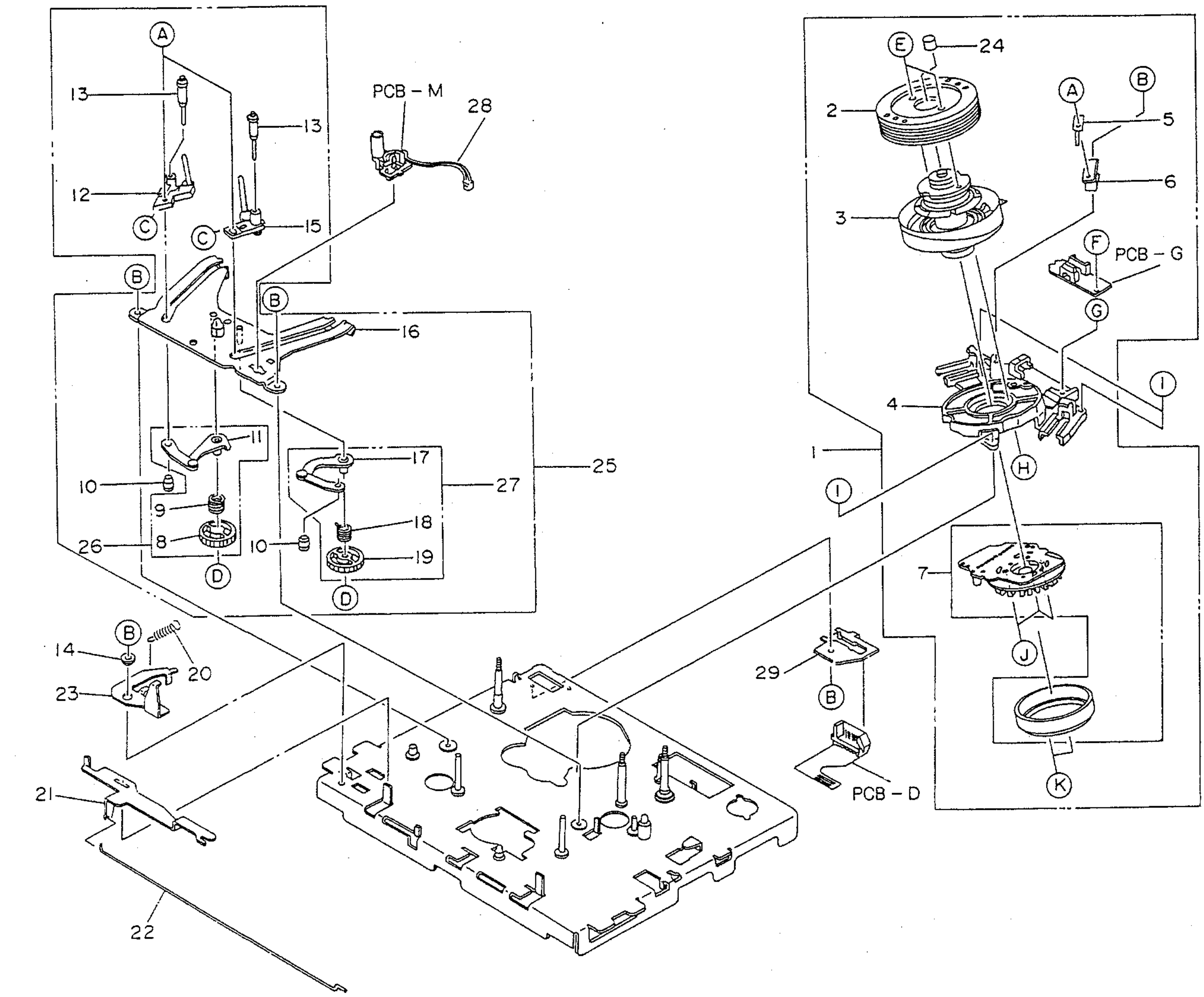
C
19
C
a
PCB-A
B
B
D
PLATE EARTH 3
D
17
18
PCB-C
PCB-F
A
PCB-E
B
B
B
B
C
PCB-P (G100SE, G110)
PLATE, SPEC
C
CLAMP EARTH
CABINET, MAIN
PCB-B
15
16
a
14
13
EARTH, SIDE
E
CUSH, 10-10-10S
15
12
CUSH, 10-10-10S
BOTTOM
11
PCB-Q
9
10
B
3
8
2
1
B
4
5
D
7
6

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-JU6-001-019		CAB, FR E<EXCEPT G100F, NZ, G100K>
1	83-JU6-009-019		CAB, FR F<G100F, G110K>
1	83-JU6-025-019		CAB, FR G<G100NZ>
2	82-JU8-044-019		PLATE, FOOT S
3	80-JU4-209-019		REFLECTOR, DCV
4	82-JU6-009-119		KEY, CLEAR<EXCEPT G100F, NZ>
4	83-JU6-024-019		KEY, CLEAR N<G100F, NZ>
5	82-JU6-008-119		KEY, PLAY
6	83-JU6-008-019		WINDOW, JAPAN<EXCEPT G100SE, G110>
6	82-JU6-005-110		WINDOW<G100SE, G110>
7	83-JU6-011-019		COVER, FR GOLD
8	82-JU6-007-019		KEY, EJECT
9	83-JU5-006-019		DOOR<DK975>
9	83-JU5-001-019		DOOR<G150>
9	83-JU6-023-019		DOOR<DK925>
9	83-JU6-002-019		DOOR<G100SH, G100SE>
9	83-JU6-028-019		DOOR<G100F, NZ>
9	83-JU6-012-010		DOOR<G110K>
9	83-JU6-010-010		DOOR<G110SE, G110AE>
10	81-JU5-020-110		PLATE, RC15
11	83-JU5-003-010		PLATE, FR 5A<DK975, G150>
11	83-JU6-004-010		PLATE, FR<DK925, G100SH, SE G110SE, AE>
11	83-JU6-026-010		PLATE, FR 6C<G100F>
11	83-JU6-027-010		PLATE, FR 6D<G100NZ>
11	83-JU6-013-010		PLATE, FR 6B<G110K>
12	82-JU6-006-019		KEY, POWER
13	82-JU8-047-019		BADGE, AIWA<EXCEPT G100SE, G110>
13	81-DS1-011-019		BADGE, AIWA N<G100SE, G110>
14	83-JU5-002-019		DOOR, CASS 5A<DK975, G150>
14	83-JU6-003-019		DOOR, CASS 6A<DK925, G100, G110>
15	81-JUK-045-019		FELT, FOOT 8-8
16	83-JU6-021-019		PLATE, VOLTAGE
17	82-JU6-013-119		HLDR, JACK<EXCEPT G100SE, G110>
17	82-JU6-019-119		HLDR, JACK<G100SE, G110>
18	83-JU6-006-019		PLATE, JACK KE<DK975, DK925>
18	82-JU6-045-019		PLATE, JACK<G150, G100SH, F, SE, G110
18	83-JU6-029-019		PLATE, JACK 6NZ<G100NZ>
19	82-JU6-012-019		CAB, STELL<EXCEPT G100SE, G110>
19	82-JU6-027-018		CAB, STELL<G100SE, G110>
A	87-067-189-019		BVIT3B+2.6-8
B	87-067-680-019		BVIT3B+3-10
C	87-067-660-019		BVT2+3-8 W/O SLOT BLK
D	87-067-758-019		BVT2+3-12 W/O SLOT
E	87-761-096-419		VFT2+3-10

VIDEO MECHANISM EXPLODED VIEW 1/7

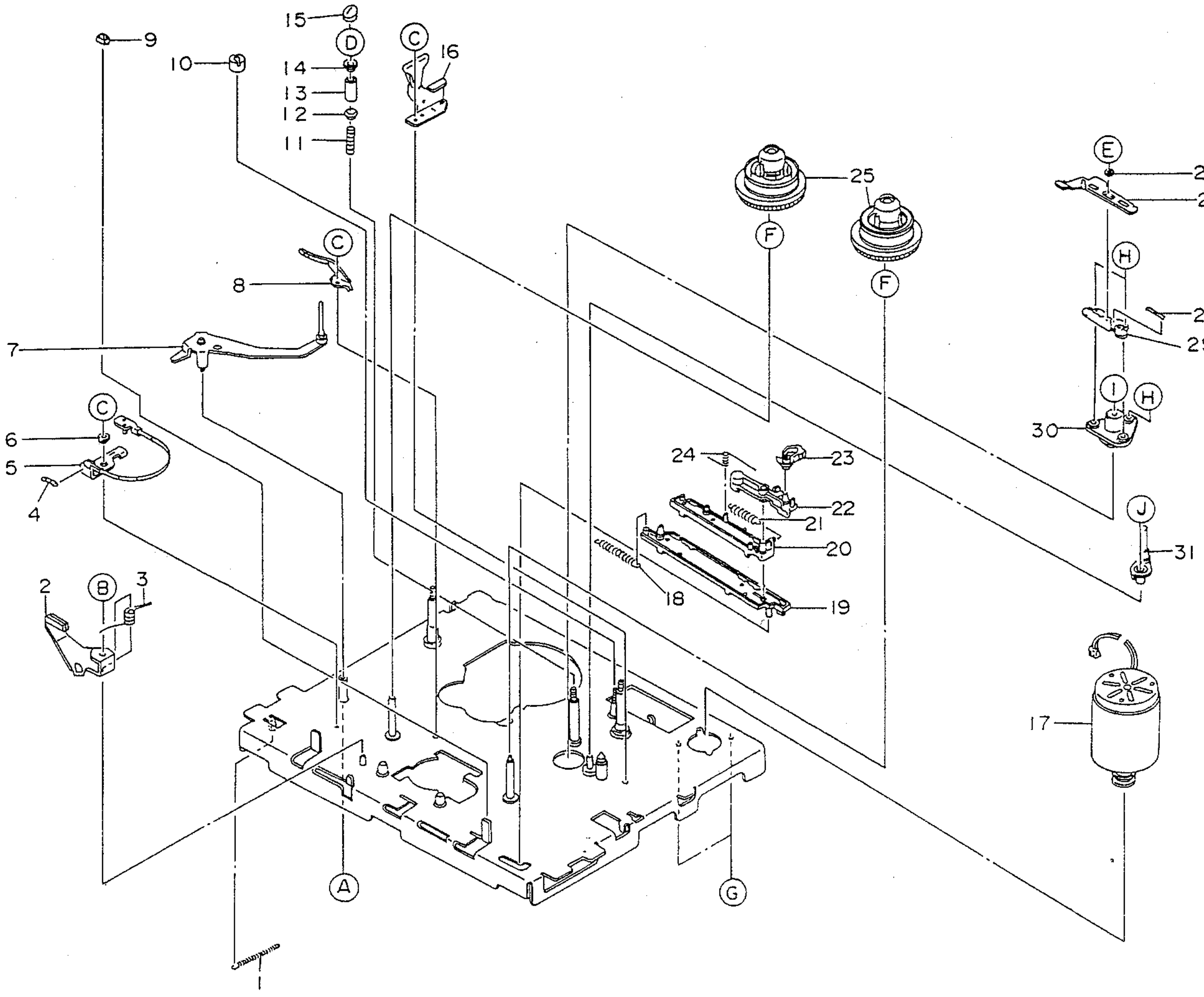


VIDEO MECHANISM PARTS LIST 1/7

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-625-0A0		CYLINDER ASSY
2	S8-059-012-000		UPPER DRUM TPB3-012
3	S8-059-013-040		LOWER DRUM ASSY
4	S8-059-010-010		CYLINDER MOUNT
5	S8-059-010-540		DRUM EARTH FLAT SPRING
6	S8-059-010-020		DRUM EARTH BRACKET
7	S6-004-030-240		MOTOR TM85
8	S8-059-030-060		T LOADING GEAR L
9	S8-059-030-080		LOADING GEAR SPRING L
10	S8-059-030-140		LOADING BOSS
11	S8-059-035-020		LOADING PLATE L SEMI ASSY
12	S8-059-030-040		LOADING BLOCK L
13	S8-000-030-370		ROLLER POST ST
14	S8-059-060-180		COLLAR
15	S8-059-030-050		LOADING BLOCK R
16	S8-059-035-010		LOADING BASE SEMI ASSY
17	S8-059-035-030		LOADING PLATE R SEMI ASSY
18	S8-059-030-090		LOADING GEAR SPRING R
19	S8-059-030-070		T LOADING GEAR R
20	S8-059-130-140		REC LEVER SPRING
21	S8-059-130-070		REC ACTUATOR
22	S8-059-130-110		REC ACTUATE SPOKE
23	S8-059-130-060		REC LEVER
24	S8-059-010-260		DRUM EARTH
25	S8-059-033-010		LOADING BASE ASSY
26	S8-059-033-020		LOARDING GEAR L ASSY
27	S8-059-033-030		LOADING GEAR R ASSY
28	S8-059-133-030		LAMP ASSY
29	S8-059-010-710		CONNECTOR BRACKET
A	S9-665-000-000		CUP SCREW 2.6X3
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-C17-202-730		SCREW CAMERA
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-972-000-000		BIND TAMS SCREW 3X8
F	S9-973-000-000		W TAMS SCREW 2.6X6
G	S9-715-000-000		WASHER 2.6
H	S9-999-180-180		TAPPING SCREW
I	S9-205-000-000		C TAPPING SCREW 3X10
J	S9-055-000-000		SCREW 2.6X20
K	S9-999-200-350		COLLAR SCREW

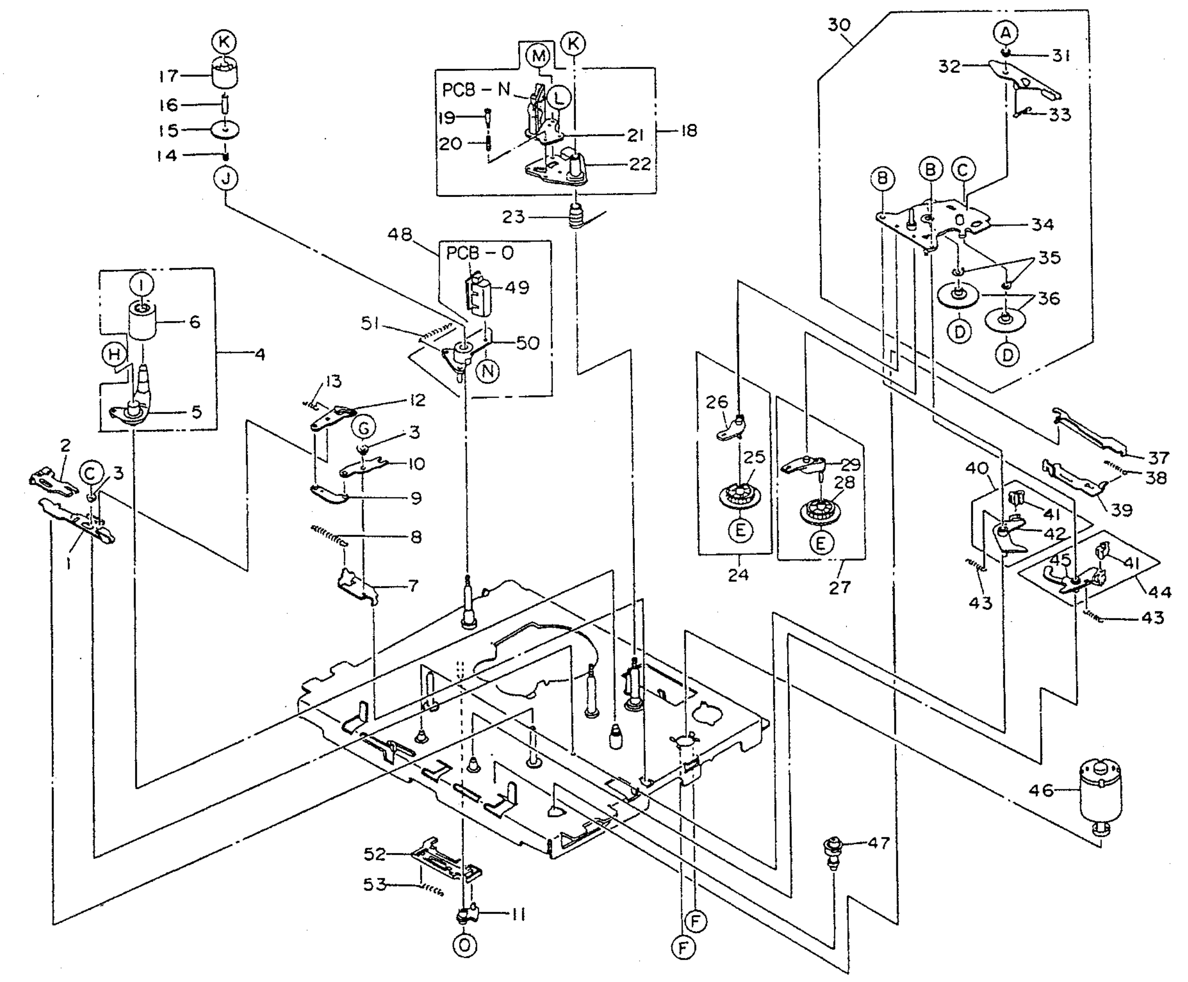
VIDEO MECHANISM EXPLODED VIEW 2/7



VIDEO MECHANISM PARTS LIST 2/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-080-200		BT ACTUATE PLATE SPRING
2	S8-059-103-040		S SOFT BRAKE ASSY
3	S8-059-100-220		S SOFT BRAKE SPRING
4	S8-059-080-170		BAND HOLDER SPRING
5	S8-059-083-020		BT BAND ASSY
6	S8-059-080-150		BAND HOLDER COLLAR
7	S8-059-085-010		BT ARM SEMI ASSY
8	S8-059-080-090		BACK TENSION SUPPORT
9	S8-059-020-230		DAMPER RUBBER
10	S8-059-020-290		TRACKING ADJUSTER
11	S8-059-020-260		TAPE GUIDE SPRING
12	S8-000-030-290		TAPE GUIDE FLANGE D
13	S8-000-030-140		TAPE GUIDE
14	S8-000-032-8A0		TAPE GUIDE FLANGE C
15	S8-000-030-190		GUIDE CAP
16	S8-059-023-010		OPEN ANGLE ASSY
17	S8-059-073-020		CAPSTAN MOTOR ASSY
18	S8-059-100-100		BRAKE ACTUATE BASE SPRING
19	S8-059-100-090		BRAKE ACTUATE BASE
20	S8-059-100-110		BRAKE PLATE
21	S8-059-100-120		BRAKE PLATE SPRING
22	S8-059-100-130		TRIGGER LEVER
23	S8-059-100-140		TRIGGER HOOK
24	S8-059-100-230		TRIGGER LEVER SPRING
25	S8-059-053-010		REEL ASSY
26	S8-059-170-100		RG SLIDE PLATE COLLAR
27	S8-059-170-030		RG SLIDE PLATE
28	S8-059-170-110		RG SLIDE SPRING
29	S8-059-170-090		RG SLIDE BASE
30	S8-059-073-010		METAL HOUSING ASSY
31	S8-059-175-020		RG ARM SEMI ASSY
A	S9-999-030-150		PW CUT 2.1X4X0.5
B	S9-876-000-000		PW CUT 2.1X5X0.5
C	S9-191-000-000		C TAPPING SCREW 2.6X4
D	S9-453-000-000		NUT 3.0
E	S9-077-000-000		TAMS SCREW 2X4
F	S9-969-000-000		D WASHER 3.1X6X0.6
G	S9-105-000-000		TAMS SCREW 3X4
H	S9-195-000-000		C TAPPING SCREW 2.6X8
I	S9-999-060-030		NYLON WASHER 2.92X5X0.5
J	S9-884-000-000		PW 2.6X6X0.5 CUT

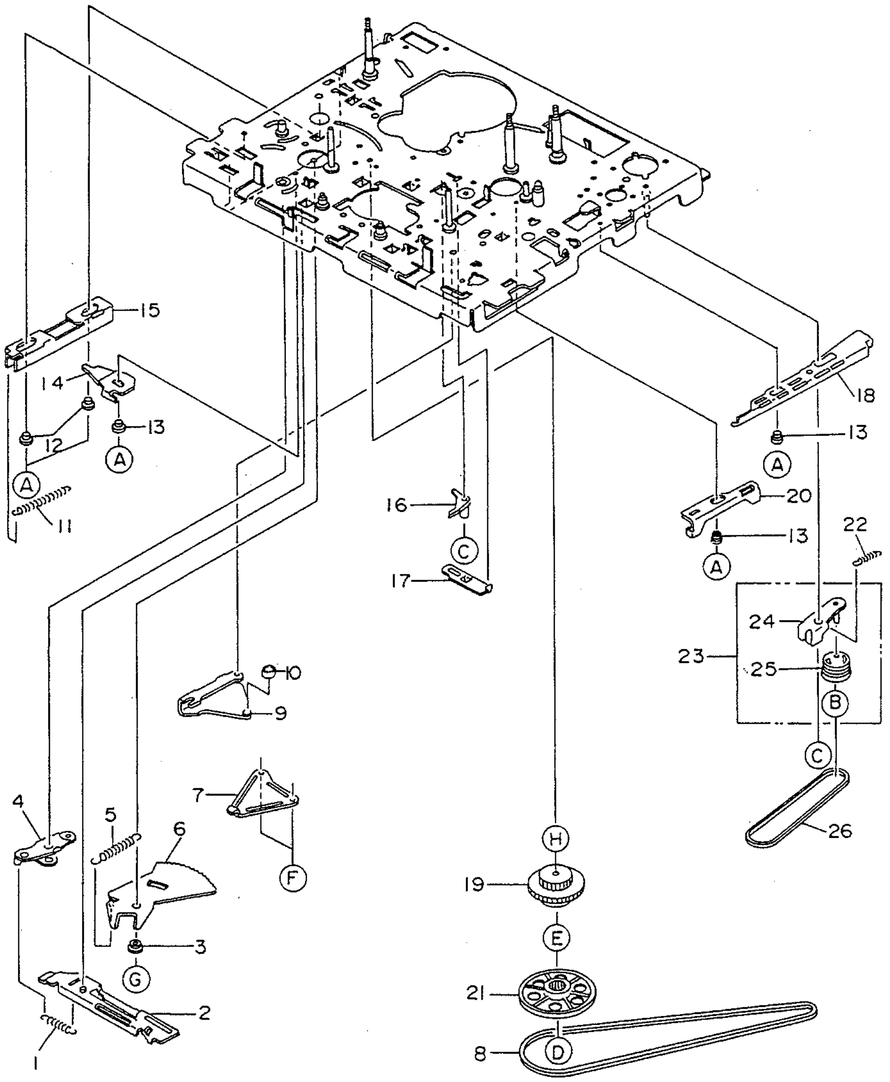
VIDEO MECHANISM EXPLODED VIEW 3/7



VIDEO MECHANISM PARTS LIST 3/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION	REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-060-240		P SLIDE PLATE A	36	S8-059-090-6A0		REEL DRIVE GEAR
2	S8-059-060-250		P SLIDE PLATE B	37	S8-059-100-160		BRAKE LIFTER
3	S8-059-060-180		COLLAR	38	S8-059-100-180		L BRAKE ACTUATOR SPRING
4	S8-059-063-010		PINCH ROLLER ARM ASSY	39	S8-059-100-170		L BRAKE ACTUATOR
5	S8-059-065-010		PINCH ROLLER ARM SEMI ASSY	40	S8-059-103-010		S BRAKE ARM ASSY
6	S8-000-090-220		PINCH ROLLER A	41	S8-059-100-190		BRAKE SHOE
7	S8-059-060-190		P ANGLE HOLDER	42	S8-059-100-010		S BRAKE ARM
8	S8-059-060-200		P-SPRING, ROLLER	43	S8-059-100-020		BRAKE ARM SPRING
9	S8-059-060-060		JOINT PLATE	44	S8-059-103-020		T BRAKE ARM ASSY
10	S8-059-060-050		P ACTUATE ANGLE	45	S8-059-100-030		T BRAKE ARM
11	S8-059-040-110		FE ACTUATE LEVER	46	S8-059-113-010		LOADING MOTOR ASSY
12	S8-059-060-040		P ACTUATE ARM	47	S8-059-113-020		TRIGGER BEARING ASSY
13	S8-059-060-090		P-SPRING ACTUATE ARM	48	S8-059-043-020		FE PLATE ASSY
14	S8-059-040-090		TAPE GUIDE FLANGE SPRING	49	S6-204-150-030		FE HEAD HV113006
15	S8-059-040-070		TAPE GUIDE FLANGE A	50	S8-059-040-040		FE PLATE
16	S8-059-040-060		IMPEDANCE ROLLER SLEEVE	51	S8-059-040-080		FE PLATE SPRING
17	S8-059-040-050		IMPEDANCE ROLLER	52	S8-059-040-100		FE SLIDE PLATE
18	S8-059-043-080		HEAD BASE ASSY	53	S8-059-040-120		FE ACTUATE SPRING
19	S8-000-060-260		AZIMUTH SPRING SCREW	A	S9-974-000-000		SL FH SCREW 2X3
20	S8-000-060-040		AZIMUTH SPRING	B	S9-077-000-000		TAMS SCREW 2X4
21	S6-204-150-060		ACE HEAD HV225211	C	S9-192-000-000		C TAPPING SCREW 2.6X5
22	S8-059-045-020		HEAD BASE SEMI ASSY	D	S9-500-000-000		E RING S1.5
23	S8-059-040-150		HEAD SPRING	E	S9-743-000-000		PW CUT 1.6X3.8X0.3
24	S8-059-093-140		P GEAR ASSY	F	S9-105-000-000		C TAPPING SCREW 3X4
25	S8-059-092-0A0		PLAY GEAR	G	S9-096-000-000		TAMS SCREW 2.6X4
26	S8-059-093-030		P GEAR ARM ASSY	H	S9-999-030-110		PW CUT 5X8X0.5
27	S8-059-093-150		RF GEAR ASSY	I	S9-038-000-000		SCREW 2.6X4
28	S8-059-092-2A0		FF GEAR	J	S9-337-000-000		PLANE WASHER 3X8X0.5
29	S8-059-093-040		RF GEAR ARM ASSY	K	S9-953-000-000		NYLON NUT M3
30	S8-059-093-160		SUB PLATE ASSY	L	S9-999-200-250		SCREW 3X6(SHAPE TYPE)
31	S8-059-100-070		T SOFT BRAKE ARM COLLAR	M	S9-705-000-000		LONG LOCK SCREW 2.6X7
32	S8-059-103-030		T SOFT BRAKE ASSY	N	S9-114-000-000		FLANGE BIND 2X3
33	S8-059-100-060		T-SPRING SOFT BRAKE ARM	O	S9-876-000-000		PW CUT 2.1X5X0.5
34	S8-059-095-010		SUB PLATE SEMI ASSY				
35	---		WAVE WASHER				

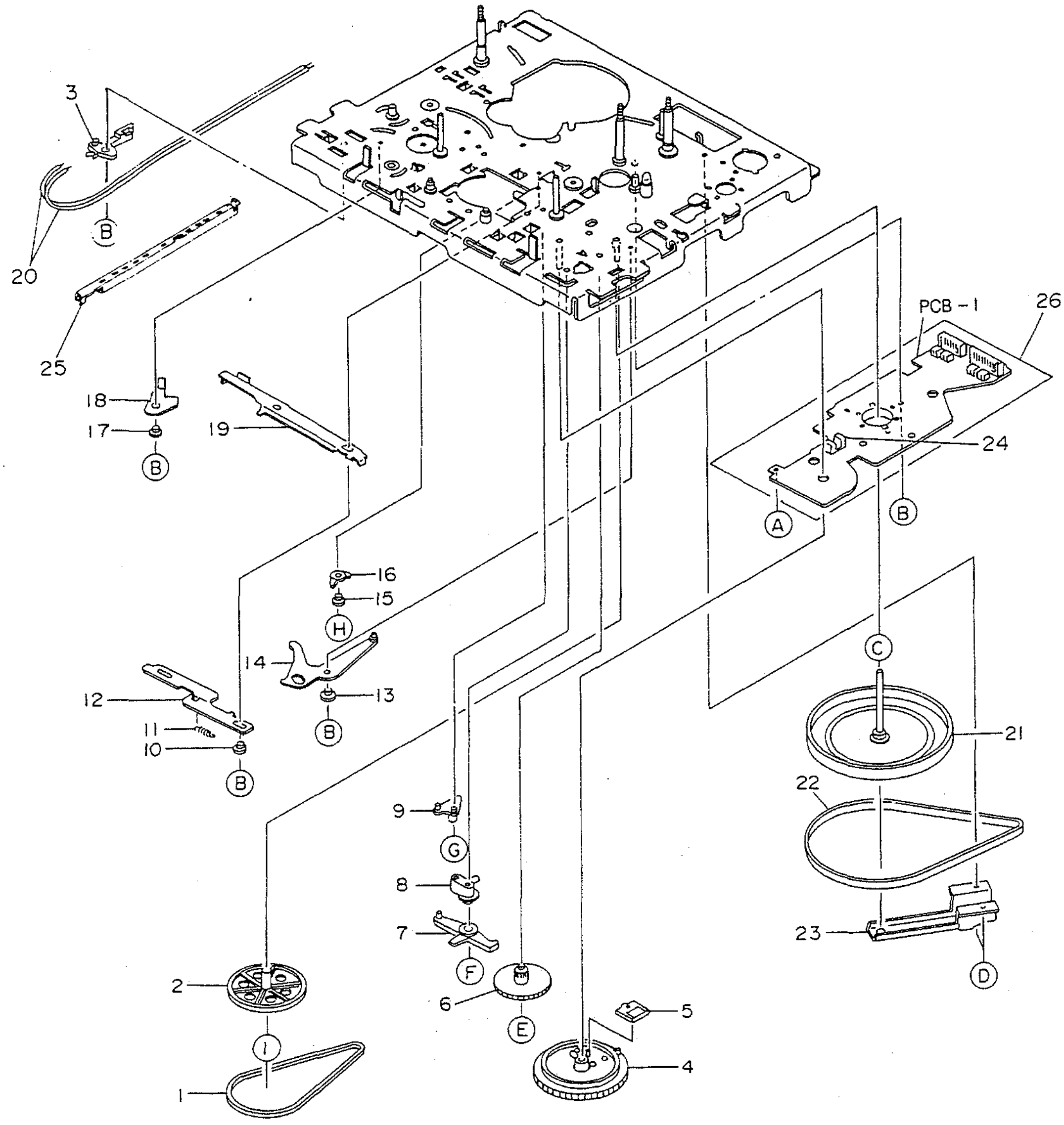
VIDEO MECHANISM EXPLODED VIEW 4/7



VIDEO MECHANISM PARTS LIST 4/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-120-050		LOADING ACTUATOR SPRING
2	S8-059-125-030		LOADING ACTUATOR SEMI ASSY
3	S8-059-120-100		L GEAR PLATE COLLAR
4	S8-059-125-020		LOADING ACTUATE LVR SEMI ASSY
5	S8-059-120-120		L GEAR PLATE SPRING
6	S8-059-120-090		L GEAR PLATE
7	S8-059-120-110		LOADING LEVER REINFORCE PLATE
8	S8-059-090-170		DRIVE BELT
9	S8-059-125-010		LOADING LEVER SEMI ASSY
10	S8-059-120-130		CAM ROLLER
11	S8-059-080-130		BACK TENSION SPRING
12	S8-059-080-210		BT ACTUATE PLATE COLLAR
13	S8-059-060-180		COLLAR
14	S8-059-080-180		BT ACTUATE LEVER
15	S8-059-080-190		BT ACTUATE PLATE
16	S8-059-170-010		RG ACTUATE ARM
17	S8-059-170-020		ORG ACTUATE
18	S8-059-150-070		L BRAKE PLATE
19	S8-059-093-100		CLUTCH ASSY
20	S8-059-150-080		EJECT ACTUATOR
21	S8-059-093-010		MIDDLE PULLEY ASSY
22	S8-059-150-110		IDLER ARM SPRING
23	S8-059-153-030		E IDLER ARM ASSY
24	S8-059-155-020		E IDLER ARM SEMI ASSY
25	S8-059-150-150		EJECT PULLEY
26	S8-059-150-060		FL BELT
A	S9-192-000-000		C TAPPING SCREW 2.6X5
B	S9-743-000-000		PW CUT 1.6X3.8X0.3
C	S9-876-000-000		PW CUT 2.1X5X0.5
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-999-060-040		NYLON WASHER 2.98X6X0.3
F	S9-078-000-000		TAMS SCREW 2X5
G	S9-203-000-000		C TAPPING SCREW 3X6
H	S9-W03-301-800		NYLON WASHER 3.3X6X0.3

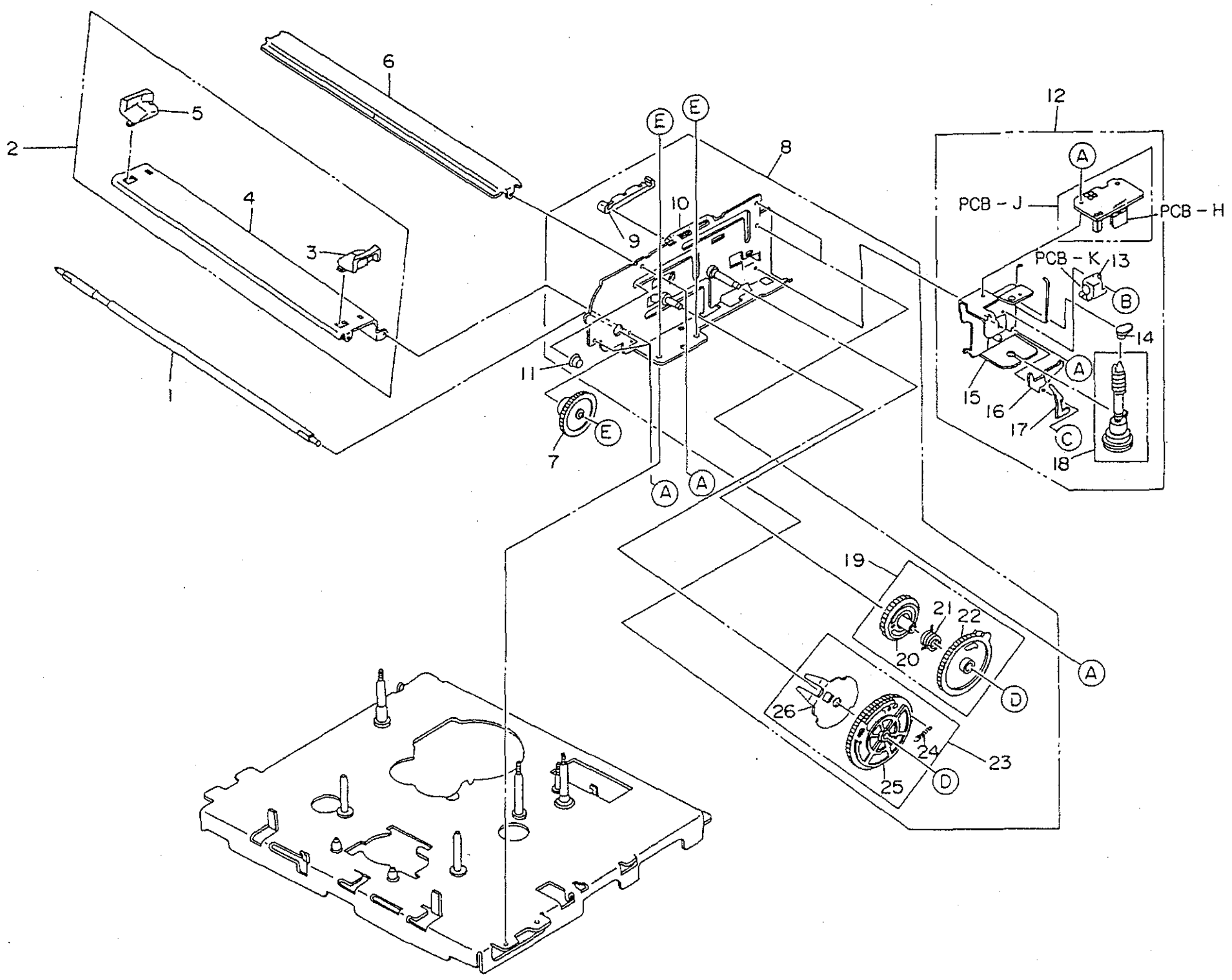
VIDEO MECHANISM EXPLODED VIEW 5/7



VIDEO MECHANISM PARTS LIST 5/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-110-060		LOADING BELT
2	S8-059-110-030		LOADING PULLEY
3	S6-401-011-770		LEAF SWITCH MCV-00321MVDO
4	S8-059-110-010		LOADING CAM
5	S8-059-110-020		S BRUSH
6	S8-059-110-040		LOADING GEAR
7	S8-059-110-140		EJECT ARM
8	S8-059-110-130		BRAKE ACTUATE ARM
9	S8-059-110-120		SEARCH ARM B
10	S8-059-060-110		P SLIDER COLLAR
11	S8-059-060-230		P-SPRING SLIDER
12	S8-059-060-100		P SLIDER
13	S8-059-060-170		P CAM LEVER COLLAR
14	S8-059-065-020		P CAM LEVER SEMI ASSY
15	S8-059-060-130		P CRANK COLLAR
16	S8-059-060-120		P CRANK
17	S8-059-060-180		COLLAR
18	S8-059-080-230		BT RETURN LEVER
19	S8-059-080-100		BT CHANGE PLATE
20	---		WIRE
21	S8-059-070-140		FLYWHEEL CAPSTAN
22	S8-059-070-100		MAIN BELT
23	S8-059-073-030		FL ANGLE ASSY
24	S6-808-080-030		REEL SENSOR
25	---		WIRE HOLDER
26	S8-059-133-020		BASE PLATE ASSY
A	S9-803-000-000		S TAPPING SCREW 2.6X5
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-912-000-000		PW 3.1X6X0.5
D	S9-202-000-000		C TAPPING SCREW 3X5
E	S9-876-000-000		PW CUT 2.1X5X0.5
F	S9-999-030-100		PW CUT 2.6X8X0.5
G	S9-884-000-000		PW CUT 2.6X6X0.5
H	S9-999-180-100		C TAPPING FH SCREW 2.6X4
I	S9-999-700-140		HL WASHER CUT 1.7X4X0.3

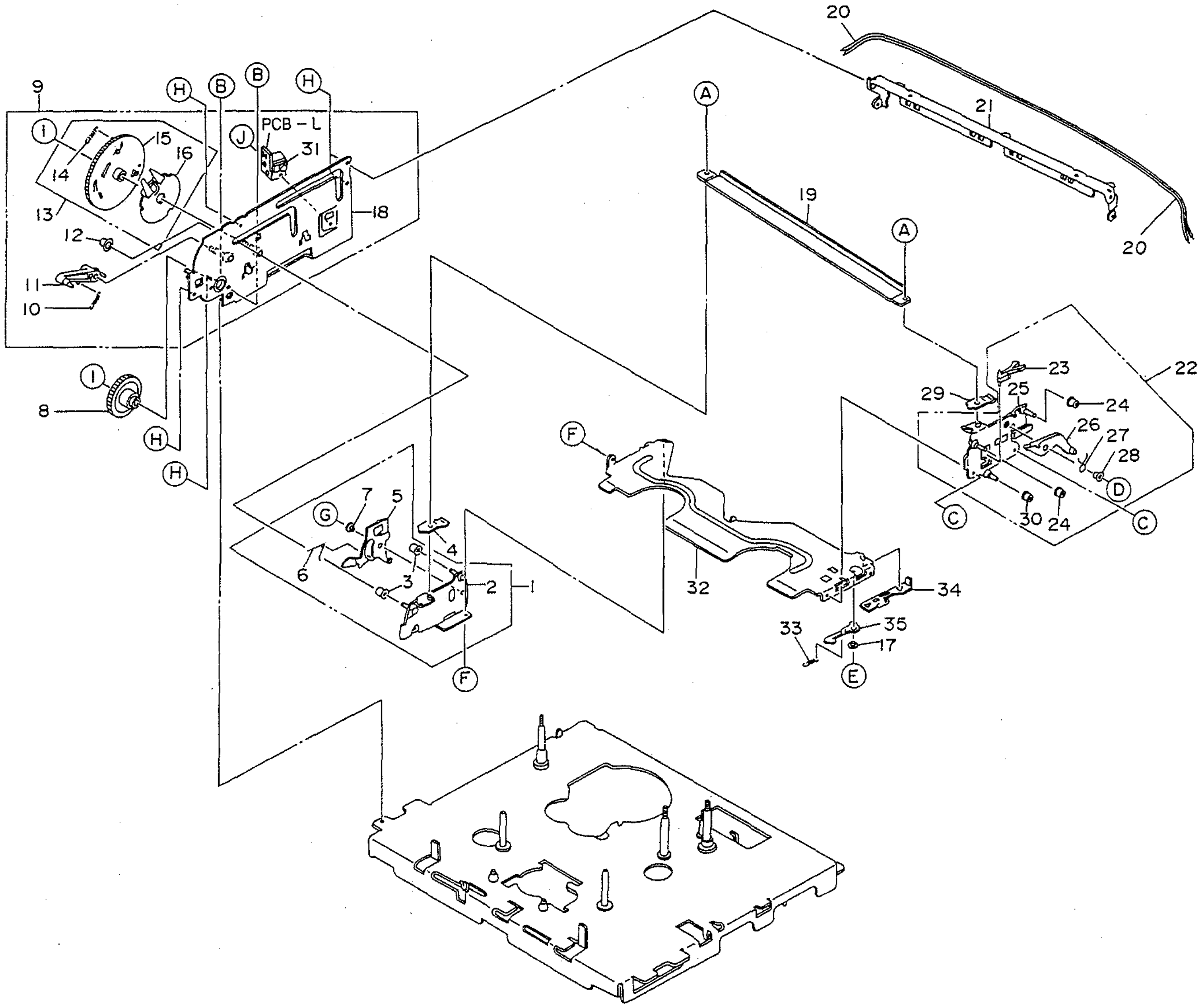
VIDEO MECHANISM EXPLODED VIEW 6/7



VIDEO MECHANISM PARTS LIST 6/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-160-600		SYNCHRONIZE SHAFT
2	S8-059-163-070		FRONT ANGLE ASSY
3	S8-059-160-250		TAPE GUIDE R
4	S8-059-160-180		FRONT ANGLE
5	S8-059-160-240		TAPE GUIDE L
6	S8-059-160-660		UPPER PLATE
7	S8-059-160-170		SYNCHRONIZE GEAR A
8	S8-059-163-390		FRAME R ASSY
9	S8-000-220-260		OPEN LEVER GUIDE
10	S8-059-165-070		FRAME R SEMI ASSY
11	S8-000-220-240		GUIDE SLEEVE
12	S8-059-163-180		C LOAD BRACKET ASSY
13	---		SENSOR P. C. B RM ASSY
14	S8-059-160-060		F WORM BEARING A
15	S8-059-165-060		C ROAD BRACKET SEMI ASSY
16	S8-059-160-340		IN SW LEVER
17	S8-059-160-330		S SW LEVER
18	S8-059-163-190		F LOADING CLUTCH ASSY
19	S8-059-163-210		WORM WHEEL ASSY
20	S8-059-160-450		FRICTION GEAR
21	S8-059-160-310		FRICTION SPRING
22	S8-059-160-360		WORM WHEEL
23	S8-059-163-120		LIFT GEAR R ASSY
24	S8-000-220-450		LP SPRING
25	S8-000-220-150		LIFT GEAR R
26	S8-000-220-110		LIFT ARM
A	S9-096-000-000		TAMS SCREW 2. 6X4
B	S9-078-000-000		TAMS SCREW 2X5
C	S9-743-000-000		PW CUT 1. 6X3. 8X0. 3
D	S9-504-000-000		E RING S2. 5
E	S9-192-000-000		C TAPPING SCREW 2. 6X5

VIDEO MECHANISM EXPLODED VIEW 7/7



VIDEO MECHANISM PARTS LIST 7/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-163-090		SIDE PLATE L ASSY
2	S8-059-165-030		SIDE PLATE L SEMI ASSY
3	S8-000-220-750		GUIDE ROLLER
4	S8-059-160-280		CASSETTE PUSH PLATE
5	S8-000-220-660		C LOCK PLATE L
6	S8-059-160-300		LOCK PLATE SPRING L
7	S8-000-190-630		LOCK PLATE COLLAR
8	S8-059-160-170		SYNCHRONIZE GEAR A
9	S8-059-163-380		FRAME L ASSY
10	S8-059-160-680		LIFT LEVER SPRING
11	S8-059-160-670		LIFT LEVER
12	S8-000-220-240		GUIDE SLEEVE
13	S8-059-163-140		LIFT GEAR L ASSY
14	S8-000-220-450		LP SPRING
15	S8-000-220-140		LIFT GEAR L
16	S8-000-220-110		LIFT ARM
17	S8-059-060-180		COLLAR
18	S8-059-165-080		FRAME L SEMI ASSY
19	S8-000-220-650		TOP STAY
20	---		END SENSOR WIRE
21	S8-059-160-090		REAR ANGLE
22	S8-059-163-080		SIDE PLATE R ASSY
23	S8-000-220-160		LOCK RELEASE LEVER
24	S8-000-220-750		GUIDE ROLLER
25	S8-059-165-020		SIDE PLATE R SEMI ASSY

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
26	S8-000-220-250		OPEN LEVER
27	S8-000-220-440		OPEN LEVER SPRING
28	S8-000-220-420		OPEN LEVER COLLAR
29	S8-059-160-280		CASSETTE PUSH PLATE
30	S8-000-220-230		GUIDE ROLLER
31	S8-059-163-010		SENSER P. C. B LM ASSY
32	S8-000-220-030		CASSETTE HOLDER
33	S8-059-160-290		LOCK SPRING
34	S8-000-220-130		SLIDE PLATE
35	S8-000-220-120		C LOCK PLATE A
A	S9-833-000-000		SCREW 2. 3X2
B	S9-192-000-000		C TAPPING SCREW 2. 6X5
C	S9-556-000-000		SCREW 2. 6X3
D	S9-967-000-000		SL SCREW 2X4
E	S9-968-000-000		SL SCREW 2. 6X3
F	S9-991-000-000		SCREW 2. 3X2. 5
G	S9-966-000-000		SL SCREW 2X2. 5
H	S9-096-000-000		TAMS SCREW 2. 6X4
I	S9-504-000-000		E RING S2. 5
J	S9-099-000-000		TAMS SCREW 2. 6X7

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-JU5-901-019		IB〈DK975〉
2	83-JU5-902-019		IB〈G150SH〉
3	83-JU6-901-018		IB〈K〉
4	83-JU6-902-018		IB〈SE1, AE, SE2〉
5	83-JU6-903-019		IB〈DK925〉
6	83-JU6-904-019		IB〈G100SH〉
7	83-JU6-906-019		IB〈F〉
8	83-JU6-907-019		IB〈NZ〉
9	83-JU6-670-019		RC-TG100〈EXCEPT NZ〉
10	83-JU6-673-019		RC-TG100N〈NZ〉
11	87-034-594-019		AC CORD SET E〈EXCEPT SE1, AE, K, SE2, NZ〉
12	87-034-985-010		AC CORD ASSY, AS〈NZ〉
13	87-034-798-010		AC CORD ASSY, E〈SE1, AE, SE2〉
14	87-050-024-018		AC CORD ASSY, K3P〈K〉
15	87-034-796-010		CORD RF PAL〈EXCEPT SE1, AE, K, SE2〉
16	87-034-593-018		CORD RF PAL G〈SE1, AE, K, SE2〉